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NEWS 27	DEC 17	CA/CAplus enhanced with new custom IPC display formats
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FILE 'BIOSIS' ENTERED AT 11:52:23 ON 03 JAN 2008

FILE 'SCISEARCH' ENTERED AT 11:52:23 ON 03 JAN 2008

FILE 'CAPLUS' ENTERED AT 11:52:23 ON 03 JAN 2008


```
=> s matrix
L1     1556074 MATRIX

=> s l1 and soluble
L2       45242 L1 AND SOLUBLE

=> s l2 and embedded
L3        1167 L2 AND EMBEDDED

=> s l3 and impregnate?
L4           5 L3 AND IMPREGNATE?

=> s l4 and tolerance
L5           0 L4 AND TOLERANCE

=> dup remove l4
PROCESSING COMPLETED FOR L4
L6           5 DUP REMOVE L4 (0 DUPLICATES REMOVED)

=> s l6 and pd<20040304
   2 FILES SEARCHED...
L7           3 L6 AND PD<20040304

=> d l7 1-3 cbib abs

L7   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2008 ACS on STN
2005:20779   Document No. 143:46787  Shape fabrication of cotton-derived
     inorganic ultralight hollow ribbons.  Bourlinos, Athanasios B.;
     Bakandritsos, Aristeides; Pedridis, Dimitris (Inst. of Mater. Sci., NCSR
     Demokritos, Athens, 15310, Greece).  Materials Research Innovations, 8(4),
     168-169 (English) 2004.  CODEN: MRINFV.  ISSN: 1432-8917.
     Publisher: Matrice Technology Ltd..
AB   Cellulose acts as a simple and effective structural mold for the
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fabrication of various inorg. hollow ribbons, including metal oxides of diverse functions and elemental metal particles. More specifically, the surface patterning of cellulose-based cotton ribbons with suitable inorg. precursors through hydrolysis, **sol**-gel, co-precipitation, ion-exchange, and chemical modification reactions, followed by calcination of the as-made cotton derivs. in an inert atmospheric or in air, leads to a wide range of ultralight hollow inorg. materials, like metals, ceramics (CeO2, MgO, SiO2), semiconducting (α-Fe2O3, SnO2, TiO2), magnetic (γ-Fe2O3, Co3O4) and others (NdFeO3), that inherit the morphol., dimensions, and macroscopic appearance of the parent cotton template. The first step in the fabrication of hollow inorg. ribbons involves the attachment of simple inorg. precursors to the cellulose framework such as metal cations or metal alkoxides, via ion exchange, hydrolysis, **sol**-gel, and precipitation reactions. Calcination in air produces metal oxide hollow ribbons. To produce hollow ribbons of Fe, Co, Ni metals **embedded** in a carbonaceous **matrix**, the cellulose, **impregnated** with metal nitrates, was subjected to a thermal treatment in a stream of diluted H2. Of particular interest is the morphogenesis of magnetic hollow ribbons of γ-Fe2O3 and its effect on its magnetic properties. It is shown that a SEM image of γ-Fe2O3 hollow ribbons. The effect of the ribbon-like morphol. on the magnetic properties of the hollow γ-Fe2O3 ribbons could be of particular interest taking into consideration the significance of magnetic iron oxides in various applications. To this aim, we recorded the magnetization vs. applied field curves at room temperature for the γ-Fe2O3 hollow ribbons and powdered γ-Fe2O3 as a blank sample, the latter being prepared under identical conditions but in the absence of cotton. Therefore, while γ-Fe2O3 hollow ribbons and blank samples exhibit identical XRD patterns and mean particle sizes, the hollow ribbons show a considerably lower saturation magnetization (Ms = 13 emu g-1) than the powdered sample (Ms = 70 emu g-1). The reduced magnetization can be attributed to the porous structure of the hollow ribbons and, in turn, to the lower particle d. and volume packing. Currently similar morphogenesis processes using hair fibers as templates are underway.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN

1989:180184 Document No. 110:180184 Catalyst for oxidation of hydrocarbon compounds. Baiker, Alfons; Gasser, Daniel (Lonza A.-G., Switz.). Eur. Pat. Appl. EP 299485 A1 **19890118**, 11 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE. (German). CODEN: EPXXDW. APPLICATION: EP 1988-111336 19880714. PRIORITY: CH 1987-2685 19870714.

AB The title catalysts are described by the general formula Pdx(ZrOz)y, where x is a number between 1 and 99, y = 100-x, and z = 0.5-2. Catalysts having a Pd content of 0.2-20 weight%, formed by impregnation of ZrO2 with a water-**soluble** Pd salt or a complexed Pd salt, drying of the **impregnated** ZrO2 and reduction of the Pd complex with H2, are also described. The catalysts may be prepared by activation of a PdxZry alloy (x, y as above) in a gas stream containing reactants (in situ activation) or in an O2-containing gas stream at 150-350°. Use of the catalysts at temps. between room temperature and 350° and pressures between normal pressure and 10 bars for the total oxidation of CO, aliphatic hydrocarbons, aliphatic alcs., and aromatic hydrocarbons is described. A Pd33Zr67 alloy was oxidized by exposure to a N2/O2/CO gas mixture to produce a catalytic material which x-ray studies revealed consisted of Pd particles **embedded** in a Zr oxide **matrix.** The catalyst was used for the oxidation of CO to CO2.

L7 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN

1988:100050 Document No. 108:100050 Refractory composite bodies. Partridge, Graham; Hyde, Andrew Richard; Haines, John Kenneth (General Electric Co. PLC, UK). Brit. UK Pat. Appl. GB 2190929 A **19871202**, 5 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1987-10317 19870430. PRIORITY: GB 1986-10552 19860430.

AB The title refractories consist of glass-ceramic, glass, ceramic, or C fiber **embedded** in a refractory **matrix**, and are prepared

by coating the fiber with a **sol**, winding it onto a mandrel, and heat-treating the composite mass to give a gel and finally a refractory **matrix.** The resulting article may be used as an insulator or a mech. member, e.g., a cylinder liner. The **sol** is prepared by hydrolysis of an alkoxide or a salt of the appropriate metal, from various forms of SiO2, or from a silane. By using a mandrel of square cross section, flat laminate can be produced which are plied together to give multilayer, multiangle or unidirectional reinforced composite. A tow of continuous SiC fibers was dip-infiltrated with a 1:3 Si(OEt)4-EtSi(OEt)3-based **sol**, then wound onto a 40 + 6 cm rotating mandrel with a 70° winding angle pattern; a structure was produced 4 patterns thick. The structure was air-dried 3 days, then heat-treated to 150° over 5 days at 30°/day, cooled, removed from the mandrel, and machined into 15 mm-long rings which were heat-treated at 1200° for 1 h under N. Reimpregnation and heat treatment at 1200° in N gave structures with apparent tensile strength (ATS) 20 MPa after 4 treatments. A similar composite containing C fibers had ATS 91 MPa.

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=> s soluble matrix
L8         1118 SOLUBLE MATRIX

=> s l8 and silane
L9            2 L8 AND SILANE

=> dup remove l9
PROCESSING COMPLETED FOR L9
L10           2 DUP REMOVE L9 (0 DUPLICATES REMOVED)

=> d l10 1-2 cbib abs

L10  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2008 ACS on STN
2005:975659  Document No. 143:254039  Formulation of leukocyte-stimulation
     matrixes for vaccination and the determination of T-cell subtypes.
     Scholz, Martin (Leukocare GmbH, Germany). Eur. Pat. Appl. EP 1571204 A1
     20050907, 15 pp.  DESIGNATED STATES: R:  AT, BE, CH, DE, DK, ES, FR, GB,
     GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR,
     BG, CZ, EE, HU, PL, SK.  (German).  CODEN: EPXXDW.  APPLICATION: EP
     2004-5177 20040304.
AB   The invention concerns leukocyte-stimulation matrix and/or the induction
     of immunotolerance by using (a) one or more carriers; (b) a soluble
     matrix for embedding one or more components for
     leukocyte-stimulation and/or induction of immunotolerance; (c) one or more
     components for leukocyte-stimulation and/or induction of immunotolerance
     that are embedded in the soluble matrix.  Further
     ingredients are coupling agents for binding the carrier with the
     components for leukocyte-stimulation and/or induction of immunotolerance.
     Typical stimulating agents are antigens, MHC antigens, cell debris,
     viruses, etc.  Polyurethane, polystyrene, and medical metals, glasses,
     natural products are the carriers.  As coupling agents bromocyan, agarose,
     silane, etc. are used; matrixes are starch, cellulose, glycogen,
     polyethylene glycol.

L10  ANSWER 2 OF 2  SCISEARCH  COPYRIGHT (c) 2008 The Thomson Corporation  on
     STN
2001:188264  The Genuine Article (R) Number: 403NY. Chemical deposition of
     conducting polymers.  Malinauskas A (Reprint). Inst Chem Vilnius, Gostauto
     Str 9, LT-2600 Vilnius, Lithuania (Reprint); Inst Chem Vilnius, LT-2600
     Vilnius, Lithuania. POLYMER (APR 2001) Vol. 42, No. 9, pp. 3957-3972.
     ISSN: 0032-3861. Publisher: ELSEVIER SCI LTD, THE BOULEVARD, LANGFORD
     LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND. Language: English.
     *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*
AB        The coating of different materials with conducting electroactive
     polymers (CEP), i.e. polyaniline, polypyrrole, polythiophene, and their
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derivatives, provided by means of chemical polymerization, is briefly reviewed. The topics covered include the deposition of CEP (i) by bulk oxidative chemical polymerization, (ii) by surface-located polymerization, and (iii) by coating of micro- and nanoparticles. The coating of different materials like polymers, polymer particles, ion-exchange membranes, glass, fiber, textile, **soluble matrices**, inorganic materials is reviewed. The literature reviewed covers a 5-year period, beginning from 1995. (C) 2001 Elsevier Science Ltd. All rights reserved.

```
=> s l3 and antigen
L11         40 L3 AND ANTIGEN

=> s l11 and stimulate leukocyte
L12          0 L11 AND STIMULATE LEUKOCYTE

=> s l11 and induction of tolerance
   4 FILES SEARCHED...
L13          0 L11 AND INDUCTION OF TOLERANCE

=> s l11 and embedded
L14         40 L11 AND EMBEDDED

=> s l11 and pd<20040304
   2 FILES SEARCHED...
L15         36 L11 AND PD<20040304

=> d l15 1-36 cbib abs
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L15 ANSWER 1 OF 36 MEDLINE on STN

2004483763. PubMed ID: 15451458. Human-compatible collagen **matrix** for prolonged and reversible systemic delivery of erythropoietin in mice from gene-modified marrow stromal cells. Eliopoulos Nicoletta; Lejeune Laurence; Martineau Daniel; Galipeau Jacques. (Lady Davis Institute for Medical Research, Jewish General Hospital, McGill University, Montreal, Quebec H3T 1E2, Canada.) Molecular therapy : the journal of the American Society of Gene Therapy, **(2004 Oct)** Vol. 10, No. 4, pp. 741-8. Journal code: 100890581. ISSN: 1525-0016. Pub. country: United States. Language: English.

AB Bone marrow stromal cells (MSCs) can be exploited therapeutically in transgenic cell therapy approaches. Our aim was to determine if gene-modified MSCs sequestered within a clinically approved, bovine type I collagen-based viscous bulking material could serve as a retrievable implant for systemic delivery of erythropoietin (Epo). To test this hypothesis, we **embedded** Epo-secreting MSCs in viscous collagen (Contigen) and determined the pharmacological effect following implantation in normal mice. Primary MSCs from C57Bl/6 mice were retrovirally engineered to express murine Epo (mEpo) and 10(7) cells of a clonal population secreting 3 U of mEpo/10(6) cells/24 h were implanted subcutaneously in normal C57Bl/6 mice with and without viscous collagen. Without **matrix** support, Hct rose to >70% for <25 days and returned to baseline by 60 days. However, in mice implanted with viscous collagen-**embedded** MSCs, the Hct rose to >70% up to 203 days postimplantation (P < 0.0001). In parallel, plasma Epo concentration was significantly increased (P < 0.05) for >145 days. Moreover, surgical removal of the viscous collagen organoid 24 days after implantation led to reduction of Hct to baseline levels within 14 days. In conclusion, this investigation demonstrates that mEpo(+) MSCs **embedded** in a human-compatible viscous collagen **matrix** offers a potent, durable, and reversible approach for delivery of plasma-**soluble** therapeutic proteins.

L15 ANSWER 2 OF 36 MEDLINE on STN

2003386719. PubMed ID: 12921619. An experimental study on the difference

of the antigenicity of xenogenic acellular dermal **matrix.** Jiang Du-yin; Chen Bi; Jia Chi-yu; Tao Ke. (Department of Burns, Xijing Hospital, The Fourth Military Medical University, Xi'an 710032, Shaanxi Province, PR China.) Zhonghua shao shang za zhi = Zhonghua shaoshang zazhi = Chinese journal of burns, **(2003 Jun)** Vol. 19, No. 3, pp. 155-8. Journal code: 100959418. ISSN: 1009-2587. Pub. country: China. Language: Chinese.

AB OBJECTIVE: To investigate the difference of the antigenicity of xenogenic acellular dermal **matrix** (ADM) implants prepared by different methods. METHODS: The split-thickness skin sheet from swine was processed by trypsin and Triton X-100 to make xeno-ADM. Twenty-five Japanese white rabbits were divided into 5 groups, i.e. xeno-ADM(1) (conjugated with glutaradehyde), xeno-ADM(2) (conjugated with network) and xeno-ADM(3) (no conjugation, as control), in which the ADMs were and xeno-ADM(4) (conjugated) and allo-ADM (no conjugated as control), in which the ADMs were **embedded** into the subcutaneous place of rabbit ear and back after that the rabbits were pre-sensitized by xeno-ADM **soluble** protein **antigen** injections. The titers of anti ADMs antibody in rabbit serum were monitored during 2 - 32 post-operative weeks and the histological changes of the **embedded** ADMs were observed grossly and microscopically. RESULTS: The serum titers of anti-xeno-ADM in xeno-ADM(4) group was the highest. Whereas regardless of the sensitizing effects, the titers in all groups ranged as follows: xeno-ADM(3) > xeno-ADM(2) > xeno-ADM(1) ($P < 0.05 - 0.01$). About 40% serum samples in allo-ADM group exhibited positive anti-allo-ADM protein antibodies. Histologically, Evident and lasting inflammatory reaction could be found in the xeno-ADM grafting sites, which was much stronger than that in allo-ADM group. The degradation and absorption gradient of ADM was ranked as follow: xeno-ADM(3) > xeno-ADM(2) > xeno-ADM(4) > xeno-ADM(1) > Allo-ADM. Foreign body megalocytic reaction might evoke in the surrounding of conjugated ADM. CONCLUSION: The immunogenicity in xeno-ADM was stronger than that in allo-ADM, which could induce the host to develop immune reaction restricted by IgG. Large sheets of degenerated ADM implants could lower down the **antigen**-antibody reaction and ameliorate the structural destroying and degeneration absorption of ADM induced by inflammatory immune reaction.

L15 ANSWER 3 OF 36 MEDLINE on STN

2003262377. PubMed ID: 12788385. Focal complex formation in adult cardiomyocytes is accompanied by the activation of beta3 integrin and c-Src. Willey Christopher D; Balasubramanian Sundaravadivel; Rodriguez Rosas Maria C; Ross Robert S; Kuppuswamy Dhandapani. (Cardiology Division, Department of Medicine, Gazes Cardiac Research Institute, Medical University of South Carolina, 114 Doughty Street, SC 29425 2221, Charleston, USA.) Journal of molecular and cellular cardiology, **(2003 Jun)** Vol. 35, No. 6, pp. 671-83. Journal code: 0262322. ISSN: 0022-2828. Pub. country: England: United Kingdom. Language: English.

AB In pressure-overloaded myocardium, our recent study demonstrated cytoskeletal assembly of c-Src and other signaling proteins which was partially mimicked in vitro using adult feline cardiomyocytes **embedded** in three-dimensional (3D) collagen **matrix** and stimulated with an integrin-binding Arg-Gly-Asp (RGD) peptide. In the present study, we improved this model further to activate c-Src and obtain a full assembly of the focal adhesion complex (FAC), and characterized c-Src localization and integrin subtype(s) involved. RGD dose response experiments revealed that c-Src activation occurs subsequent to its cytoskeletal recruitment and is accompanied by p130Cas cytoskeletal binding and focal adhesion kinase (FAK) Tyr925 phosphorylation. When cardiomyocytes expressing hexahistidine-tagged c-Src via adenoviral gene delivery were used for RGD stimulation, the expressed c-Src exhibited relocation: (i) biochemical analysis revealed c-Src movement from the detergent-**soluble** to the -insoluble cytoskeletal fraction and (ii) confocal microscopic analysis showed c-Src movement from a nuclear/perinuclear to a sarcolemmal region. RGD treatment also caused sarcolemmal co-localization of FAK and vinculin. Characterization of

integrin subtypes revealed that beta3, but not beta1, integrin plays a predominant role: (i) expression of cytoplasmic domain of beta1A integrin did not affect the RGD-stimulated FAC formation and (ii) both pressure-overloaded myocardium and RGD-stimulated cardiomyocytes exhibited phosphorylation of beta3 integrin at Tyr773/785 sites but not beta1 integrin at Thr788/789 sites. Together these data indicate that RGD treatment in cardiomyocytes causes beta3 integrin activation and c-Src sarcolemmal localization, that subsequent c-Src activation is accompanied by p130Cas binding and FAK Tyr925 phosphorylation, and that these events might be crucial for growth and remodeling of hypertrophying adult cardiomyocytes.

L15 ANSWER 4 OF 36 MEDLINE on STN

1999419271. PubMed ID: 10487832. Vascular channel formation by human melanoma cells in vivo and in vitro: vasculogenic mimicry. Maniotis A J; Folberg R; Hess A; Seftor E A; Gardner L M; Pe'er J; Trent J M; Meltzer P S; Hendrix M J. (Department of Anatomy, University of Iowa Cancer Center, University of Iowa College of Medicine, Iowa City, USA.) The American journal of pathology, **(1999 Sep)** Vol. 155, No. 3, pp. 739-52. Journal code: 0370502. ISSN: 0002-9440. Pub. country: United States. Language: English.

AB Tissue sections from aggressive human intraocular (uveal) and metastatic cutaneous melanomas generally lack evidence of significant necrosis and contain patterned networks of interconnected loops of extracellular **matrix.** The **matrix** that forms these loops or networks may be solid or hollow. Red blood cells have been detected within the hollow channel components of this patterned **matrix** histologically, and these vascular channel networks have been detected in human tumors angiographically. Endothelial cells were not identified within these **matrix-embedded** channels by light microscopy, by transmission electron microscopy, or by using an immunohistochemical panel of endothelial cell markers (Factor VIII-related **antigen**, Ulex, CD31, CD34, and KDR[Flk-1]). Highly invasive primary and metastatic human melanoma cells formed patterned solid and hollow **matrix** channels (seen in tissue sections of aggressive primary and metastatic human melanomas) in three-dimensional cultures containing Matrigel or dilute Type I collagen, without endothelial cells or fibroblasts. These tumor cell-generated patterned channels conducted dye, highlighting looping patterns visualized angiographically in human tumors. Neither normal melanocytes nor poorly invasive melanoma cells generated these patterned channels in vitro under identical culture conditions, even after the addition of conditioned medium from metastatic pattern-forming melanoma cells, **soluble** growth factors, or regimes of hypoxia. Highly invasive and metastatic human melanoma cells, but not poorly invasive melanoma cells, contracted and remodeled floating hydrated gels, providing a biomechanical explanation for the generation of microvessels in vitro. cDNA microarray analysis of highly invasive versus poorly invasive melanoma tumor cells confirmed a genetic reversion to a pluripotent embryonic-like genotype in the highly aggressive melanoma cells. These observations strongly suggest that aggressive melanoma cells may generate vascular channels that facilitate tumor perfusion independent of tumor angiogenesis.

L15 ANSWER 5 OF 36 MEDLINE on STN

1998253277. PubMed ID: 9591052. Assembly of basement membrane in vitro by cooperation between alveolar epithelial cells and pulmonary fibroblasts. Furuyama A; Kimata K; Mochitate K. (Environmental Health Sciences Division, National Institute for Environmental Studies, Ibaraki, Japan.. kawagoe@nies.go.jp) . Cell structure and function, **(1997 Dec)** Vol. 22, No. 6, pp. 603-14. Journal code: 7608465. ISSN: 0386-7196. Pub. country: Japan. Language: English.

AB To investigate basement membrane formation by cooperation between pneumocytes and pulmonary fibroblasts, we cultured type II alveolar epithelial cells obtained from rats transfected with SV40-large T **antigen** gene (SV40-T2 cells) on type I collagen **matrices**

. On fibroblasts-**embedded** gel (T2-Fgel), SV40-T2 cells ultrastructurally formed a continuous and thin layer of lamina densa, while on collagen gel without fibroblasts (T2-gel) SV40-T2 cells produced only discontinuous and diffuse deposits. Stripping SV40-T2 cells off the tissues by H2O2 treatment revealed a continuous and plane surface of lamina densa assembled on the T2-Fgel tissue, whereas only amorphous deposits appeared on the T2-gel tissue. Immunolocalization of major basement membrane components showed that type IV collagen, laminin, perlecan and entactin (nidogen) were continuously integrated on the lamina densa in T2-Fgel. In T2-gel, all these components were discontinuously distributed beneath SV40-T2 cells. The contribution of pulmonary fibroblasts to the assembly of basement membrane through reorganization of collagen **matrix** and/or **soluble** factors was examined by the cultured of SV40-T2 cells on the freeze-thawed fibroblast-tissue and/or with the fibroblast-conditioned medium. Both SV40-T2 cells on the freeze-thawed fibroblast-tissue and SV40-T2 cells in T2-gel in the fibroblast-conditioned medium failed to produce a lamina densa. SV40-T2 cells could assemble a lamina densa only on the freeze-thawed fibroblast-tissue in the fibroblast-conditioned medium. These results show that the basement membrane components are assembled to a lamina densa by combination of the reorganization of collagen **matrix** and the supply of **soluble** factors by pulmonary fibroblasts.

L15 ANSWER 6 OF 36 MEDLINE on STN

97232489. PubMed ID: 9075637. Improved immunohistochemical staining of osteopontin (OPN) in paraffin-**embedded** archival bone specimens following **antigen** retrieval: anti-human OPN antibody recognizes multiple molecular forms. Devoll R E; Pinero G J; Appelbaum E R; Dul E; Troncoso P; Butler W T; Farach-Carson M C. (Department of Basic Sciences, The University of Texas-Houston, Health Science Center, Dental Branch, 6516 John Freeman Avenue, Houston, Texas 77030, USA.) Calcified tissue international, **(1997 Apr)** Vol. 60, No. 4, pp. 380-6. Journal code: 7905481. ISSN: 0171-967X. Pub. country: United States. Language: English.

AB Studies to assess osteopontin (OPN) localization in adult human bone using immunochemical techniques produce conflicting results due to variations in tissue processing or antibody immunoreactivity. The present study was designed to resolve these discrepancies using well-characterized antibodies and improved **antigen** detection. An anti-osteopontin (alpha-OPN) antiserum was developed that recognizes various **soluble** molecular weight forms of human OPN, including monomeric, cleaved, and dimerized products. An affinity column of full length recombinant human OPN (rOPN) coupled to support was used to purify alpha-OPN antibodies. Western analysis showed that the affinity-purified antibodies recognized numerous molecular weight forms of OPN. These antibodies were used to study the distribution of OPN in adult human bone using immunohistochemical techniques combined with an **antigen** retrieval protocol utilizing a newly developed **antigen** retrieval solution, Retriev-Alltrade mark (Bronco Technologies Inc, Pasadena, TX). Immunolocalization of OPN in archival bone specimens prior to **antigen** retrieval produced no demonstrable immunostaining even at high concentrations of alpha-OPN. Use of the **antigen** retrieval protocol restored OPN immunoreactivity, with strong staining apparent in cement lines, osteoblasts, osteocytes, canaliculi, osteoid, and bone **matrix.** We conclude that **antigen** retrieval restores immunochemical recognition of OPN in archival specimens containing bone without increasing nonspecific binding.

L15 ANSWER 7 OF 36 MEDLINE on STN

96257896. PubMed ID: 8658052. Fibronectin co-stimulates via the alpha 5 beta 1 receptor IL-2, IL-4 production by splenic, granuloma lymphocytes of Schistosoma mansoni infected mice. Zhu Y; Boros D L. (Department of Immunology and Microbiology, Wayne State University School of Medicine, Detroit, MI, USA.) Scandinavian journal of immunology, **(1996 Jun)** Vol. 43, No. 6, pp. 633-9. Journal code: 0323767. ISSN: 0300-9475. Pub.

country: ENGLAND: United Kingdom. Language: English.

AB In murine Schistosomiasis mansoni, **soluble** worm egg **antigens** (SEA) induce L3T4+ T helper cell-mediated chronic granulomatous inflammations around parasite eggs. Within the fully developed granuloma lymphocytes, macrophages, and eosinophils, fibroblasts are **embedded** in extracellular **matrix** (ECM) composed of fibronectin, laminin, glycosaminoglycans and collagens. The present study examined in vitro the putative co-stimulatory role of fibronectin (FN) in acute and chronic infection splenic and granuloma lymphocyte responses. Plate-bound FN enhanced the anti-CD3 MoAb stimulated normal and acute or chronic infection splenic lymphoproliferation by 20-32%. The co-stimulatory effect was evident in SEA stimulated acute but not chronic infection spleen cells. Proliferation of stimulated granuloma lymphocytes could not be up-regulated by immobilized FN. Plate-bound FN significantly enhanced IL-2 and IL-4 production by SEA-stimulated acute, but not chronic, infection granuloma lymphocytes. However, FN had no influence on the high level of IL-2, IL-4 production of anti-CD3 MoAb stimulated acute or chronic infection splenic or granuloma lymphocytes. Because in the **antigen**-stimulated acute infection spleen or granuloma cultures the co-stimulatory effect by FN was abrogated by the tripeptide (RGD) arg-gly asp, and anti alpha 5 beta 1 antibody, enhancement is attributed to signalling via the alpha 5 beta 1 integrin receptor of lymphocytes.

L15 ANSWER 8 OF 36 MEDLINE on STN

87139125. PubMed ID: 2434559. Usefulness of the immunogold technique in quantitation of a **soluble** protein in ultra-thin sections. Posthuma G; Slot J W; Geuze H J. The journal of histochemistry and cytochemistry : official journal of the Histochemistry Society, **(1987 Apr)** Vol. 35, No. 4, pp. 405-10. Journal code: 9815334. ISSN: 0022-1554. Pub. country: United States. Language: English.

AB We used a model system to study whether measurements of absolute local **antigen** concentrations at the electron microscopic level are feasible by counting immunogold labeling density in ultra-thin sections. The model system consisted of a **matrix** of a variable concentration of gelatin, which was mixed with given concentrations of rat pancreas amylase and fixed according to various fixation protocols. With a relatively mild fixation, there was no clear proportionality between anti-amylase gold labeling and amylase concentration in ultra-thin cryosections. This was presumably due to uncontrolled loss of amylase from the sections. After stronger fixation with 2% glutaraldehyde for 4 hr, labeling density reflected the amylase concentration very well. We observed that **matrix** (gelatin) density influenced labeling density. A low gelatin concentration of 5% allowed penetration of immunoreagents into the cryosection, resulting in a high and variable labeling density. In gelatin concentrations of 10% and 20%, labeling density was lower but proportional to amylase concentration. To establish an equal (minimal) penetration of immunoreagents, we **embedded** model blocks with different **matrix** densities in polyacrylamide (PAA). In ultra-thin cryosections of these PAA-**embedded** blocks, anti-amylase labeling was proportional to amylase concentration even at a low (5%) gelatin concentration. Anti-amylase labeling in ultra-thin sections from Lowicryl K4M low temperature-**embedded** blocks was higher than in PAA sections, but the results were less consistent and depended to some extent on **matrix** density. These results, together with the earlier observation that acrylamide completely penetrates intracellular compartments (Slot JW, Geuze HJ: Biol Cell 44:325, 1982), demonstrate that it is possible to measure true intracellular concentrations of **soluble** proteins in situ using ultra-thin cryosections of PAA-**embedded** tissue.

L15 ANSWER 9 OF 36 MEDLINE on STN

86195103. PubMed ID: 3486171. Electron microscopic immunocytochemistry of interstitial retinol-binding protein in vertebrate retinas. Schneider B G; Papermaster D S; Liou G I; Fong S L; Bridges C D. Investigative ophthalmology & visual science, **(1986 May)** Vol. 27, No. 5, pp.

679-88. Journal code: 7703701. ISSN: 0146-0404. Pub. country: United States. Language: English.

AB Interstitial retinol binding protein (IRBP) is a **soluble** glycoprotein found in the interphotoreceptor **matrix** (IPM) and implicated in shuttling retinol between retina and pigment epithelium (PE) cells. The authors have studied the distribution of IRBP by EM immunocytochemistry. Thin sections of Lowicryl K4M **embedded** R. pipiens, X. laevis, bovine and human retinas were labeled sequentially with affinity purified rabbit antibovine IRBP, biotinyl-sheep antirabbit F(Ab')2, and avidin-ferritin, or with avidin and biotinyl-ferritin. **Antigen** was in the interphotoreceptor space and intercalated into the narrow spaces between PE cell microvilli. IRBP penetration between PE cells was delimited abruptly by the PE junctional complexes. IRBP was also observed in small vacuoles in the apical cytoplasm of PE cells and in PE cell phagosomes that contained IRBP surrounding ingested rod tips. IPM was heavily but inhomogeneously labeled. **Antigen** was usually deposited along the ROS and COS plasma membrane in a confluent layer, but sometimes it was distributed in large (ca. 0.2-micron thick) clumps. In bovine and human retinas, the connecting cilium was ensheathed by **antigen** at high density but an unlabeled halo surrounded its plasma membrane. The apical plasma membrane of the inner segment aligned along the connecting cilium was also densely coated by **antigen.** In both frog retinas, the ridges of the periciliary ridge complex (PRC) were coated with **antigen.** In none of the four species examined was Golgi labeling present. In bovine retinas, labeled vacuoles (granules) in the myoid region were found in very low numbers (15 vacuoles in 358 rod cells). Amphibian retinas also contained only small numbers of myoid vacuoles labeled by anti-IRBP. Absence of antibody binding to intracellular sites of synthesis in any of the cells that abut the interphotoreceptor **matrix** suggests that the **antigen** may be masked prior to its release from the synthetic cell(s) or that its level is below limits of detection.

L15 ANSWER 10 OF 36 MEDLINE on STN

80007478. PubMed ID: 90071. Development of a new primary fixative for electron microscopic immunocytochemical localization of intracellular **antigens** in cultured cells. Willingham M C; Yamada S S. The journal of histochemistry and cytochemistry : official journal of the Histochemistry Society, **(1979 May)** Vol. 27, No. 5, pp. 947-60. Journal code: 9815334. ISSN: 0022-1554. Pub. country: United States. Language: English.

AB We have developed a new primary fixative that permits the localization of intracellular **antigens** with well preserved ultrastructural morphology. This primary fixation method employs a mixture of a water **soluble** carbodiimide with glutaraldehyde, and preserves morphology, yet produces a permeable cytosol **matrix** so that antibodies can gain access to fixed proteins. Cultured cells were primarily fixed, treated with detergent to permeabilize their membranes, reacted with peroxidase labeled antibodies, secondarily fixed, and **embedded** in situ. The variations in morphology and accessibility of intracellular **antigens** were evaluated for a variety of fixatives. Concanavalin A and alpha 2 macroglobulin were chosen as examples of intracellular protein **antigens** to evaluate these fixation methods. Both of the proteins were localized in intracellular vesicles.

L15 ANSWER 11 OF 36 EMBASE

1999318172 EMBASE Vascular channel formation by human melanoma cells in vivo and in vitro: Vasculogenic mimicry. Maniotis A.J.; Folberg R.; Hess A.; Seftor E.A.; Gardner L.M.G.; Pe'er J.; Trent J.M.; Meltzer P.S.; Hendrix M.J.C.. Dr. M.J.C. Hendrix, Dept. of Anatomy and Cell Biology, College of Medicine, University of Iowa, Iowa City, IA 52242-1109, United States. mary-hendrix@uiowa.edu. American Journal of Pathology Vol. 155, No. 3, pp. 739-752 **Sep 1999.**

Refs: 52.
ISSN: 0002-9440. CODEN: AJPAA4
Pub. Country: United States. Language: English. Summary Language: English.
Entered STN: 19990927. Last Updated on STN: 19990927

AB Tissue sections from aggressive human intraocular (uveal) and metastatic cutaneous melanomas generally lack evidence of significant necrosis and contain patterned networks of interconnected loops of extracellular **matrix.** The **matrix** that forms these loops or networks may be solid or hollow. Red blood cells have been detected within the hollow channel components of this patterned **matrix** histologically, and these vascular channel networks have been detected in human tumors angiographically. Endothelial cells were not identified within these **matrix-embedded** channels by light microscopy, by transmission electron microscopy, or by using an immunohistochemical panel of endothelial cell markers (Factor VIII-related **antigen**, Ulex, CD31, CD34, and KDR[Flk-1]). Highly invasive primary and metastatic human melanoma cells formed patterned solid and hollow **matrix** channels (seen in tissue sections of aggressive primary and metastatic human melanomas) in three-dimensional cultures containing Matrigel or dilute Type I collagen, without endothelial cells or fibroblasts. These tumor cell-generated patterned channels conducted dye, highlighting looping patterns visualized angiographically in human tumors. Neither normal melanocytes nor poorly invasive melanoma cells generated these patterned channels in vitro under identical culture conditions, even after the addition of conditioned medium from metastatic pattern-forming melanoma cells, **soluble** growth factors, or regimes of hypoxia. Highly invasive and metastatic human melanoma cells, but not poorly invasive melanoma cells, contracted and remodeled floating hydrated gels, providing a biomechanical explanation for the generation of microvessels in vitro, cDNA microarray analysis of highly invasive versus poorly invasive melanoma tumor cells confirmed a genetic reversion to a pluripotent embryonic-like genotype in the highly aggressive melanoma cells. These observations strongly suggest that aggressive melanoma cells may generate vascular channels that facilitate tumor perfusion independent of tumor angiogenesis.

L15 ANSWER 12 OF 36 EMBASE COPYRIGHT (c) 2008 Elsevier B.V. All rights reserved on STN

1998084813 EMBASE Assembly of basement membrane in vitro by cooperation between alveolar epithelial cells and pulmonary fibroblasts. Furuyama A.; Kimata K.; Mochitate K.. A. Furuyama, Environmental Health Sciences Div., Natl. Inst. Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki 305, Japan. Cell Structure and Function Vol. 22, No. 6, pp. 603-614 **Dec 1997.**
Refs: 30.
ISSN: 0386-7196. CODEN: CSFUDY
Pub. Country: Japan. Language: English. Summary Language: English.
Entered STN: 19980402. Last Updated on STN: 19980402

AB To investigate basement membrane formation by cooperation between pneumocytes and pulmonary fibroblasts, we cultured type II alveolar epithelial cells obtained from rats transfected with SV40-large T **antigen** gene (SV40-T2 cells) on type I collagen **matrices** . On fibroblasts-**embedded** gel (T2-Fgel), SV40-T2 cells ultrastructurallly formed a continuous and thin layer of lamina densa, while on collagen gel without fibroblasts (T2-gel) SV40-T2 cells produced only discontinuous and diffuse deposits. Stripping SV40-T2 cells off the tissues by H(2)O(2) treatment revealed a continuous and plane surface of lamina densa assembled on the T2-Fgel tissue, whereas only amorphous deposits appeared on the T2-gel tissue. Immunolocalization of major basement membrane components showed that type IV collagen, laminin, perlecan and entactin (nidogen) were continuously integrated on the lamina densa in T2-Fgel. In T2-gel, all these components were discontinuously distributed beneath SV40-T2 cells. The contribution of pulmonary fibroblasts to the assembly of basement membrane through reorganization of collagen **matrix** and/or **soluble** factors was examined by

the cultured of SV40-T2 cells on the freeze-thawed fibroblast-tissue and/or with the fibroblast-conditioned medium. Both SV40-T2 cells on the freeze-thawed fibroblast-tissue and SV40-T2 cells in T2-gel in the fibroblast-conditioned medium failed to produce a lamina densa. SV40-T2 cells could assemble a lamina densa only on the freeze-thawed fibroblast-tissue in the fibroblast-conditioned medium. These results show that the basement membrane components are assembled to a lamina densa by combination of the reorganization of collagen **matrix** and the supply of **soluble** factors by pulmonary fibroblasts.

L15 ANSWER 13 OF 36 EMBASE

1997099987 EMBASE Improved immunohistochemical staining of osteopontin (OPN) in paraffin- **embedded** archival bone specimens following **antigen** retrieval: Anti-human OPN antibody recognizes multiple molecular forms. Devoll R.E.; Pinero G.J.; Appelbaum E.R.; Dul E.; Troncoso P.; Butler W.T.; Farach-Carson M.C.. R.E. Devoll, Dental Branch, Health Science Center, University of Texas-Houston, 6516 John Freeman Avenue, Houston, TX 77030, United States. Calcified Tissue International Vol. 60, No. 4, pp. 380-386 **Apr 1997.**

Refs: 25.

ISSN: 0171-967X. CODEN: CTINDZ

Pub. Country: United States. Language: English. Summary Language: English.

Entered STN: 970422. Last Updated on STN: 970422

AB Studies to assess osteopontin (OPN) localization in adult human bone using immunochemical techniques produce conflicting results due to variations in tissue processing or antibody immunoreactivity. The present study was designed to resolve these discrepancies using wellcharacterized antibodies and improved **antigen** detection. An anti-osteopontin (α-OPN) antiserum was developed that recognizes various **soluble** molecular weight forms of human OPN, including monomeric, cleaved, and dimerized products. An affinity column of full length recombinant human OPN (rOPN) coupled to support was used to purify α-OPN antibodies. Western analysis showed that the affinity-purified antibodies recognized numerous molecular weight forms of OPN. These antibodies were used to study the distribution of OPN in adult human bone using immunohistochemical techniques combined with an **antigen** retrieval protocol utilizing a newly developed **antigen** retrieval solution, Retriev- All(TM) (Bronco Technologies Inc, Pasadena, TX). Immunolocalization of OPN in archival bone specimens prior to **antigen** retrieval produced no demonstrable immunostaining even at high concentrations of α-OPN. Use of the **antigen** retrieval protocol restored OPN immunoreactivity, with strong staining apparent in cement lines, osteoblasts, osteocytes, canaliculi, osteoid, and bone **matrix.** We conclude that **antigen** retrieval restores immunochemical recognition of OPN in archival specimens containing bone without increasing nonspecific binding.

L15 ANSWER 14 OF 36 EMBASE

1996159691 EMBASE Fibronectin Co-stimulates via the α(5)β(1) receptor IL-2, IL-4 production by splenic, granuloma lymphocytes of Schistosoma mansoni infected mice. Zhu Y.; Boros D.L.. Dr. D.L. Boros, Department Immunology/Microbiology, Wayne State Univ. School Medicine, 540 E. Canfield Avenue, Detroit, MI 48201, United States. Scandinavian Journal of Immunology Vol. 43, No. 6, pp. 633-639 **1996.**

Refs: 35.

ISSN: 0300-9475. CODEN: SJIMAX

Pub. Country: United Kingdom. Language: English. Summary Language: English.

Entered STN: 960624. Last Updated on STN: 960624

AB In murine Schistosomiasis mansoni, **soluble** worm egg **antigens** (SEA) induce L3T4(+) T helper cell-mediated chronic granulomatous inflammations around parasite eggs. Within the fully developed granuloma lymphocytes, macrophages, and eosinophils, fibroblasts

are **embedded** in extracellular **matrix** (ECM) composed of fibronectin, laminin, glycosaminoglycans and collagens. The present study examined ill vitro the putative co-stimulatory role of fibronectin (FN) in acute and chronic infection splenic and granuloma lymphocyte responses. Plate-bound FN enhanced the anti-CD3 MoAb stimulated normal and acute or chronic infection splenic lymphoproliferation by 20-32%. The costimulatory effect was evident in SEA stimulated acute but not chronic infection spleen cells. Proliferation of stimulated granuloma lymphocytes could not be up-regulated by immobilized FN. Plate-bound FN significantly enhanced IL-2 and IL-4 production by SEA-stimulated acute, but not chronic, infection granuloma lymphocytes. However, FN had no influence on the high level of IL-2, IL-4 production of anti-CD3 MoAb stimulated acute or chronic infection splenic or granuloma lymphocytes. Because in the **antigen**-stimulated acute infection spleen or granuloma cultures the co-stimulatory effect by FN was abrogated by the tripeptide (RGD) arg-gly asp, and anti $\alpha(5)\beta(1)$ antibody, enhancement is attributed to signalling via the $\alpha(5)\beta(1)$ integrin receptor of lymphocytes.

L15 ANSWER 15 OF 36 EMBASE

1994350321 EMBASE Immunocytochemical detection of actin and 53 kDa polypeptide in the epididymal spermatozoa of rat and mouse. Paranko J.; Yagi A.; Kuusisto M.. J. Paranko, Department of Anatomy, University of Turku, 20520 Turku, Finland. Anatomical Record Vol. 240, No. 4, pp. 516-527 **1994.**
ISSN: 0003-276X. CODEN: ANREAK
Pub. Country: United States. Language: English. Summary Language: English.
Entered STN: 941214. Last Updated on STN: 941214

AB Background: Presence of immunocytochemically detectable actin in the rat and mouse sperm head has been enigmatic for years. In this study, we demonstrate actin in the perinuclear theca and show that the detection of actin epitopes in the rat and mouse epididymal spermatozoa can effectively be enhanced by pre-extraction of sperm cells with SDS. Methods: The study with one monoclonal and one polyclonal anti-actin antibody was carried out at conventional and confocal fluorescence and electron microscope level, and by immunoblotting of proteins isolated from the head and tail fractions. Results: In the head of the control methanol-acetone fixed rat spermatozoa, the polyclonal antibody gave a stronger immunostaining in the postacrosomal area and in the perforatorium than the monoclonal antibody. In the mouse sperm head, the monoclonal antibody labeled the ventral edge of the postacrosomal area and slightly the perforatorium, whereas the polyclonal antibody stained the entire perinuclear space. In the SDS-extracted spermatozoa, an intense postacrosomal and perforatorial labeling was obtained with both antibodies but, in particular in the rat spermatozoa, the middle lateral portion of the postacrosomal segment remained unlabeled. Sonication seemed to cause structural modifications which specifically impeded staining with the monoclonal antibody. Both antibodies detected actin in the basal plate and the monoclonal antibody in the neck. Amorphous **matrix** of the connecting piece showed immunogold labeling. In the tail, the monoclonal antibody recognized actin and a relatively basic 53 kDa polypeptide, whereas the polyclonal antibody reacted with several protein bands. SDS-**soluble** actin of the tail was addressed to the midpiece and the SDS-insoluble 53 kDa protein profoundly to the outer dense fibers of the principal piece. Conclusions: Intense labeling of actin in the SDS-extracted rat and mouse spermatozoa was presumably due to the generated demasking of actin epitopes **embedded** in the perinuclear cytoplasm. The results are important in confirming that actin in the rat and mouse sperm head is not lost during spermiogenesis but apparently contributes to the three-dimensional packing of the mature perinuclear cytoplasm. This study further demonstrates the importance of the methods used in sample preparation and advantages of confocal microscopy when attempting to detect cytoskeletal proteins which, as in spermatozoa, may occur in small quantities.

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1991290574 EMBASE Immunogold electron microscopy of **soluble** proteins: Localization of Bet v I major allergen in ultra-thin sections of birch pollen after anhydrous fixation techniques. Grote M.. M. Grote, Institute of Medical Physics, Munster University, Hufferstr. 68, D-4400 Munster, Germany. Journal of Histochemistry and Cytochemistry Vol. 39, No. 10, pp. 1395-1401 **1991.**
ISSN: 0022-1554. CODEN: JHCYAS
Pub. Country: United States. Language: English. Summary Language: English.
Entered STN: 911216. Last Updated on STN: 911216

AB To localize the highly water-**soluble** major allergen Bet v I in ultra-thin sections of birch pollen, pollen grains were cracked, air-dried, and processed for electron microscopy using one of the following preparation techniques: fixation in aqueous p-formaldehyde + cetylpyridinium chloride; fixation in p-formaldehyde vapor; fixation in benzoquinone vapor; inert dehydration; or no fixation. Afterwards the pollen grains were **embedded** in Lowicryl K4M resin at low temperature. Ultra-thin sections were cut and incubated with a monoclonal antibody against Bet v I, followed by a gold-labeled secondary antibody. In some experiments, commercial rabbit IgG antibodies against birch pollen allergens were also used, followed by incubation with the protein A-gold complex. Bet v I could be localized only after vapor fixation and in the inert dehydrated specimens. Best preservation of ultrastructure and antigenicity was obtained after p-formaldehyde vapor fixation. Bet v I antibody binding sites were detected only in the cytoplasmic **matrix** of the pollen grain, never in the pollen wall. Commercial rabbit antibodies bound to cytoplasm and wall of all prepared specimens, even after aqueous fixation. This might be explained by the assumption that these antibodies recognize a variety of antigenic and allergenic structures, not all of which are so highly **soluble** as Bet v I.

L15 ANSWER 17 OF 36 EMBASE COPYRIGHT (c) 2008 Elsevier B.V. All rights reserved on STN

1986159545 EMBASE Electron microscopic immunocytochemistry of interstitial retinol-binding protein in vertebrate retinas. Schneider B.G.; Papermaster D.S.; Liou G.I.; et. al.. Department of Pathology, Yale Medical School, VA Medical Center, West Haven, CT, United States. Investigative Ophthalmology and Visual Science Vol. 27, No. 5, pp. 679-688 **1986.**
ISSN: 0146-0404. CODEN: IOVSDA
Pub. Country: United States. Language: English.
Entered STN: 911210. Last Updated on STN: 911210

AB Interstitial retinol binding protein (IRBP) is a **soluble** glycoprotein found in the interphotoreceptor **matrix** (IPM) and implicated in shuttling retinol between retina and pigment epithelium (PE) cells. The authors have studied the distribution of IRBP by EM immunocytochemistry. Thin sections of Lowicryl K4M **embedded** R. pipiens, X. laevis, bovine and human retinas were labeled sequentially with affinity purified rabbit antibovine IRBP, biotinyl-sheep antirabbit F(Ab')(2), and avidin-ferritin, or with avidin and biotinyl-ferritin. **Antigen** was in the interphotoreceptor space and intercalated into the narrow spaces between PE cell microvilli. IRBP penetration between PE cells was delimited abruptly by the PE junctional complexes. IRBP was also observed in small vacuoles in the apical cytoplasm of PE cells and in PE cell phagosomes that contained IRBP surrounding ingested rod tips. IPM was heavily but inhomogeneously labeled. **Antigen** was usually deposited along the ROS and COS plasma membrane in a confluent layer, but sometimes it was distributed in large (ca. 0.2-μm thick) clumps. In bovine and human retinas, the connecting cilium was ensheathed by **antigen** at high density but an unlabeled halo surrounded its plasma membrane. The apical plasma membrane of the inner segment aligned along the connecting cilium was also densely coated by **antigen.** In both frog retinas, the ridges of the periciliary ridge complex (PRC) were coated with **antigen.** In none of the four species examined

was Golgi labeling present. In bovine retinas, labeled vacuoles (granules) in the myoid region were found in very low numbers (15 vacuoles in 358 rod cells). Amphibian retinas also contained only small numbers of myoid vacuoles labeled by anti-IRBP. Absence of antibody binding to intracellular sites of synthesis in any of the cells that abut the interphotoreceptor **matrix** suggests that the **antigen** may be masked prior to its release from the synthetic cell(s) or that its level is below limits of detection.

L15 ANSWER 18 OF 36 EMBASE COPYRIGHT (c) 2008 Elsevier B.V. All rights reserved on STN

1979196773 EMBASE Development of a new primary fixative for electron microscopic immunocytochemical localization of intracellular **antigens** in cultured cells. Willingham M.C.; Yamada S.S.. Lab. Molec. Biol., Nat. Cancer Inst., Bethesda, Md. 20205, United States. Journal of Histochemistry and Cytochemistry Vol. 27, No. 5, pp. 947-960 **1979.**

ISSN: 0022-1554. CODEN: JHCYAS

Pub. Country: United States. Language: English.

AB We have developed a new primary fixative that permits the localization of intracellular **antigens** with well preserved ultrastructural morphology. This primary fixation method employs a mixture of a water **soluble** carbodiimide with glutaraldehyde, and preserves morphology, yet produces a permeable cytosol **matrix** so that antibodies can gain access to fixed proteins. Cultured cells were primarily fixed, treated with detergent to permeabilize their membranes, reacted with peroxidase labeled antibodies, secondarily fixed, and **embedded** in situ. The variations in morphology and accessibility of intracellular **antigens** were evaluated for a variety of fixatives. Concanavalin A and $\alpha(2)$ macroglobulin were chosen as examples of intracellular protein **antigens** to evaluate these fixation methods. Both of the proteins were localized in intracellular vesicles.

L15 ANSWER 19 OF 36 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1997:204770 Document No.: PREV199799503973. Improved immunohistochemical staining of osteopontin (OPN) in paraffin-**embedded** archival bone specimens following **antigen** retrieval: Anti-human OPN antibody recognizes multiple molecular forms. Devoll, R. E. [Reprint author]; Pinero, G. J.; Appelbaum, E. R.; Dul, E.; Troncoso, P.; Butler, W. T.; Farach-Carson, M. C.. Dep. Basic Sci., Univ. Texas-Houston, Health Sci. Cent., Dental Branch, 6516 John Freeman Ave., Houston, TX 77030, USA. Calcified Tissue International, (**1997**) Vol. 60, No. 4, pp. 380-386.

CODEN: CTINDZ. ISSN: 0171-967X. Language: English.

AB Studies to assess osteopontin (OPN) localization in adult human bone using immunochemical techniques produce conflicting results due to variations in tissue processing or antibody immunoreactivity. The present study was designed to resolve these discrepancies using well characterized antibodies and improved **antigen** detection. An anti-osteopontin (alpha-OPN) antiserum was developed that recognizes various **soluble** molecular weight forms of human OPN, including monomeric, cleaved, and dimerized products. An affinity column of full length recombinant human OPN (rOPN) coupled to support was used to purify alpha-OPN antibodies. Western analysis showed that the affinity-purified antibodies recognized numerous molecular weight forms of OPN. These antibodies were used to study the distribution of OPN in adult human bone using immunohistochemical techniques combined with an **antigen** retrieval protocol utilizing a newly developed **antigen** retrieval solution, Retriev-All (Bronco Technologies Inc, Pasadena, TX). Immunolocalization of OPN in archival bone specimens prior to **antigen** retrieval produced no demonstrable immunostaining even at high concentrations of alpha-OPN. Use of the **antigen** retrieval protocol restored OPN immunoreactivity, with strong staining apparent in

cement lines, osteoblasts, osteocytes, canaliculi, osteoid, and bone **matrix.** We conclude that **antigen** retrieval restores immunochemical recognition of OPN in archival specimens containing bone without increasing nonspecific binding.

L15 ANSWER 20 OF 36 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1996:333042 Document No.: PREV199699055398. Fibronectin co-stimulates via the alpha-5-beta-1 receptor IL-2, IL-4 production by splenic, granuloma lymphocytes of Schistosoma mansoni infected mice. Zhu, Y.; Boros, D. L. [Reprint author]. Dep. Immunol. Microbiol., Wayne State Univ., Sch. Med., 540 E. Canfield Ave., Detroit, MI 48201, USA. Scandinavian Journal of Immunology, (**1996**) Vol. 43, No. 6, pp. 633-639.
CODEN: SJIMAX. ISSN: 0300-9475. Language: English.

AB In murine Schistosomiasis mansoni, **soluble** worm egg **antigens** (SEA) induce L3T4+ T helper cell-mediated chronic granulomatous inflammations around parasite eggs. Within the fully developed granuloma lymphocytes, macrophages, and eosinophils, fibroblasts are **embedded** in extracellular **matrix** (ECM) composed of fibronectin, laminin, glycosaminoglycans and collagens. The present study examined in vitro the putative co-stimulatory role of fibronectin (FN) in acute and chronic infection splenic and granuloma lymphocyte responses. Plate-bound FN enhanced the anti-CD3 MoAb stimulated normal and acute or chronic infection splenic lymphoproliferation by 20-32%. The costimulatory effect was evident in SEA stimulated acute but not chronic infection spleen cells. Proliferation of stimulated granuloma lymphocytes could not be up-regulated by immobilized FN. Plate-bound FN significantly enhanced IL-2 and IL-4 production by SEA-stimulated acute, but not chronic, infection granuloma lymphocytes. However, FN had no influence on the high level of IL-2, IL-4 production of anti-CD3 MoAb stimulated acute or chronic infection splenic or granuloma lymphocytes. Because in the **antigen**-stimulated acute infection spleen or granuloma cultures the co-stimulatory effect by FN was abrogated by the tripeptide (RGD) arg-gly asp, and anti alpha-5-beta-1 antibody, enhancement is attributed to signalling via the alpha-5-beta-1 integrin receptor of lymphocytes.

L15 ANSWER 21 OF 36 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1987:229939 Document No.: PREV198783118109; BA83:118109. USEFULNESS OF THE IMMUNOGOLD TECHNIQUE IN QUANTITATION OF A **SOLUBLE** PROTEIN IN ULTRA-THIN SECTIONS. POSTHUMA G [Reprint author]; SLOT J W; GEUZE H J. LAB CELL BIOLOGY, MED FAC, UNIV UTRECHT, NIC BEETSSTRAAT 22, 3511 HG UTRECHT, THE NETHERLANDS. Journal of Histochemistry and Cytochemistry, (**1987**) Vol. 35, No. 4, pp. 405-410.
CODEN: JHCYAS. ISSN: 0022-1554. Language: ENGLISH.

AB We used a model system to study whether measurements of absolute local **antigen** concentrations at the electron microscopic level are feasible by counting immunogold labeling density in ultra-thin sections. The model system consisted of a **matrix** of a variable concentration of gelatin, which was mixed with given concentrations of rat pancreas amylase and fixed according to various fixation protocols. With a relatively mild fixation, there was no clear proportionality between anti-amylase gold labeling and amylase concentration in ultra-thin cryosections. This was presumably due to uncontrolled loss of amylase from the sections. After stronger fixation with 2% glutaraldehyde for 4 hr, labeling density reflected the amylase concentration very well. We observed that **matrix** (gelatin) density influenced labeling density. A low gelatin concentration of 5% allowed penetration of immunoreagents into the cryosection, resulting in a high and variable labeling density. In gelatin concentrations of 10% and 20%, labeling density was lower but proportional to amylase concentration. To establish an equal (minimal) penetration of immunoreagents, we **embedded** model blocks with different **matrix** densities in polyacrylamide (PAA). In ultra-thin cryosections of these PAA-**embedded** blocks, anti-amylase labeling was proportional to amylase concentration even at a

low (5%) gelatin concentration. Anti-amylase labeling in ultra-thin sections from Lowicryl K4M low temperature-**embedded** blocks was higher than in PAA sections, but the results were less consistent and depended to some extent on **matrix** density. These results, together with the earlier observation that acrylamide completely penetrates intracellular compartments (Slot JW, Gueze HJ: Biol Cell 44:325, 1982), demonstrate that it is possible to measure true intracellular concentrations of **soluble** proteins in situ using ultra-thin cryosections of PAA-**embedded** tissue.

L15 ANSWER 22 OF 36 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1986:344579 Document No.: PREV198682058783; BA82:58783. ELECTRON MICROSCOPIC IMMUNOCYTOCHEMISTRY OF INTERSTITIAL RETINOL-BINDING PROTEIN IN VERTEBRATE RETINAS. SCHNEIDER B G [Reprint author]; PAPERMASTER D S; LIOU G I; FONG S-L; BRIDGES C D. DEP PATHOL, UNIV TEXAS HEALTH SCI CENT, 7703 FLOYD CURL DRIVE, SAN ANTONIO, TEX 78284, USA. Investigative Ophthalmology and Visual Science, (**1986**) Vol. 27, No. 5, pp. 679-688.
CODEN: IOVSDA. ISSN: 0146-0404. Language: ENGLISH.

AB Interstitial retinol binding protein (IRBP) is a **soluble** glycoprotein found in the interphotoreceptor **matrix** (IPM) and implicated in shuttling retinol between retina and pigment epithelium (PE) cells. The authors have studied the distribution of IRBP by EM immunocytochemistry. Thin sections of Lowicryl K4M **embedded** Rana pipiens, Xenopus laevis, bovine and human retinas were labeled sequentially with affinity purified rabbit antibovine IRBP, biotinyl-sheep antirabbit F(Ab')2, and avidin-ferritin, or with avidin and biotinyl-ferritin. **Antigen** was in the interphotoreceptor space and intercalated into the narrow spaces between PE cell microvilli. IRBP penetration between PE cells was delimited abruptly by the PE junctional complexes. IRBP was also observed in small vacuoles in the apical cytoplasm of PE cells and in PE phagosomes that contained IRBP surrounding ingested rod tips. IPM was heavily but inhomogeneously labeled. **Antigen** was usually deposited along the ROS and COS plasma membrane in a confluent layer, but sometimes it was distributed in large (ca. 0.2-μm thick) clumps. In bovine and human retinas, the connecting cilium was ensheathed by **antigen** at high density but an unlabeled halo surrounded its plasma membrane. The apical plasma membrane of the inner segment aligned along the connecting cilium was also densely coated by **antigen.** In both frog retinas, the ridges of the periciliary ridge complex (PRC) were coated with **antigen.** In none of the four species examined was Golgi labeling present. In bovine retinas, labeled vacuoles (granules) in the myoid region were found in very low numbers (15 vacuoles in 358 rod cells). Amphibian retinas also contained only small numbers of myoid vacuoles labeled by anti-IRBP. Absence of antibody binding to intracellular sites of synthesis in any of the cells that abut the interphotoreceptor **matrix** suggests that the **antigen** may be masked prior to its release from the synthetic cell(s) or that its level is below limits of detection.

L15 ANSWER 23 OF 36 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1979:266041 Document No.: PREV197968068545; BA68:68545. DEVELOPMENT OF A NEW PRIMARY FIXATIVE FOR ELECTRON MICROSCOPIC IMMUNO CYTOCHEMICAL LOCALIZATION OF INTRA CELLULAR **ANTIGENS** IN CULTURED CELLS. WILLINGHAM M C [Reprint author]; YAMADA S S. LAB MOL BIOL, NATL CANCER INST, BETHESDA, MD 20205, USA. Journal of Histochemistry and Cytochemistry, (**1979**) Vol. 27, No. 5, pp. 947-960.
CODEN: JHCYAS. ISSN: 0022-1554. Language: ENGLISH.

AB A new primary fixative was developed that permits the localization of intracellular **antigens** while preserving ultrastructural morphology. This primary fixation method employs a mixture of a H2O **soluble** carbodiimide with glutaraldehyde which preserves morphology, yet produces a permeable cytosol **matrix** so that antibodies can bind to fixed proteins. Cultured [Swiss mouse 3T3

fibroblast] cells were primarily fixed, treated with detergent to permeabilize their membranes, reacted with peroxidase-labeled antibodies, secondarily fixed, and **embedded** in situ. The variations in morphology and accessibility of intracelluar **antigens** were evaluated for a variety of fixatives. Concanavalin A and [human] α2 macroglobulin were chosen as examples of intracellular protein **antigens** to evaluate these fixation methods. Both proteins were localized in intracellular vesicles.

L15 ANSWER 24 OF 36 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1999:694147 The Genuine Article (R) Number: 235JD. Vascular channel formation by human melanoma cells in vivo and in vitro: Vasculogenic mimicry. Maniotis A J; Folberg R; Hess A; Seftor E A; Gardner L M G; Pe'er J; Trent J M; Meltzer P S; Hendrix M J C (Reprint). Univ Iowa, Coll Med, Dept Anat & Cell Biol, Iowa City, IA 52242 USA (Reprint); Univ Iowa, Ctr Canc, Dept Anat, Iowa City, IA USA; Univ Iowa, Ctr Canc, Dept Cell Biol, Iowa City, IA USA; Univ Iowa, Coll Med, Dept Ophthalmol & Visual Sci, Iowa City, IA USA; Univ Iowa, Coll Med, Dept Pathol, Iowa City, IA USA; Hadassah Univ Hosp, Dept Ophthalmol, IL-91120 Jerusalem, Israel; Natl Human Genome Res Inst, Canc Genet Branch, NIH, Bethesda, MD USA. AMERICAN JOURNAL OF PATHOLOGY (**SEP 1999**) Vol. 155, No. 3, pp. 739-752. ISSN: 0002-9440. Publisher: AMER SOC INVESTIGATIVE PATHOLOGY, INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3993 USA. Language: English. *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB Tissue sections from aggressive human intraocular (uveal) and metastatic cutaneous melanomas generally lack evidence of significant necrosis and contain patterned networks of interconnected loops of extracellular **matrix.** The **matrix** that forms these loops or networks may be solid or hollow. Red blood cells have been detected within the hollow channel components of this patterned **matrix** histologically, and these vascular channel networks have been detected in human tumors angiographically, Endothelial cells were not identified within these **matrix-embedded** channels by light microscopy, by transmission electron microscopy, or by using an immunohistochemical panel of endothelial cell markers (Factor VIII-related **antigen**, Ulex, CD31, CD34, and KDR[Flk-1]). Highly invasive primary and metastatic human melanoma cells formed patterned solid and hollow **matrix** channels (seen in tissue sections of aggressive primary and metastatic human melanomas) in three-dimensional cultures containing Matrigel or dilute Type I collagen, without endothelial cells or fibroblasts. These tumor cell-generated patterned channels conducted dye, highlighting looping patterns visualized angiographically in human tumors. Neither normal melanocytes nor poorly invasive melanoma cells generated these patterned channels in vitro under identical culture conditions, even after the addition of conditioned medium from metastatic pattern-forming melanoma cells, **soluble** growth factors, or regimes of hypoxia, Highly invasive and metastatic human melanoma cells, but clot poorly invasive melanoma cells, contracted and remodeled floating hydrated gels, providing a biomechanical explanation for the generation of microvessels in vitro. cDNA microarray analysis of highly invasive versus poorly invasive melanoma tumor cells confirmed a genetic reversion to a pluripotent embryonic-like genotype in the highly aggressive melanoma cells. These observations strongly suggest that aggressive melanoma cells may generate vascular channels that facilitate tumor perfusion independent of tumor angiogenesis.

L15 ANSWER 25 OF 36 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1998:162281 The Genuine Article (R) Number: YY727. Assembly of basement membrane in vitro by cooperation between alveolar epithelial cells and pulmonary fibroblasts. Furuyama A (Reprint); Kimata K; Mochitate K. Natl Inst Environm Studies, Environm Hlth Sci Div, 16-2 Onogawa, Ibaraki, Osaka 305, Japan (Reprint); Natl Inst Environm Studies, Environm Hlth Sci Div, Ibaraki, Osaka 305, Japan; Aichi Med Univ, Inst Mol Sci Med, Aichi 48011,

Japan. CELL STRUCTURE AND FUNCTION (**DEC 1997**) Vol. 22, No. 6, pp. 603-614. ISSN: 0386-7196. Publisher: JAPAN SOC CELL BIOLOGY, SHIMOTACHIURI OGAWA-HIGASHI, KAMIKYOKU KYOTO, 602, JAPAN. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB To investigate basement membrane formation by cooperation between pneumocytes and pulmonary fibroblasts, we cultured type II alveolar epithelial cells obtained from rats transfected with SV40-large T **antigen** gene (SV40-T2 cells) on type I collagen **matrices** . On fibroblasts-**embedded** gel (T2-Fgel), SV40-T2 cells ultrastructurally formed a continuous and thin layer of lamina densa, while on collagen gel without fibroblasts (T2-gel) SV40-T2 cells produced only discontinuous and diffuse deposits. Stripping SV40-T2 cells off the tissues by H2O2 treatment revealed a continuous and plane surface of lamina densa assembled on the T2-Fgel tissue, whereas only amorphous deposits appeared on the T2-gel tissue. Immunolocalization of major basement membrane components showed that type IV collagen, laminin, perlecan and entactin (nidogen) were continuously integrated on the lamina densa in T2-Fgel. In T2-gel, all these components were discontinuously distributed beneath SV40-T2 cells. The contribution of pulmonary fibroblasts to the assembly of basement membrane through reorganization of collagen **matrix** and/or **soluble** factors was examined by the cultured of SV40-T2 cells on the freeze-thawed fibroblast-tissue and/or with the fibroblast-conditioned medium. Both SV40-T2 cells on the freeze-thawed fibroblast-tissue and SV40-T2 cells in T2-gel in the fibroblast-conditioned medium failed to produce a lamina densa. SV40-T2 cells could assemble a lamina densa only on the freeze-thawed fibroblast-tissue in the fibroblast-conditioned medium. These results show that the basement membrane components are assembled to a lamina densa by combination of the reorganization of collagen **matrix** and the supply of **soluble** Factors by pulmonary fibroblasts.

L15 ANSWER 26 OF 36 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1997:236097 The Genuine Article (R) Number: WN565. Improved immunohistochemical staining of osteopontin (OPN) in paraffin-**embedded** archival bone specimens following **antigen** retrieval: Anti-human OPN antibody recognizes multiple molecular forms. Devoll R E (Reprint); Pinero G J; Appelbaum E R; Dul E; Troncoso P; Butler W T; FarachCarson M C. UNIV TEXAS, HLTH SCI CTR, DEPT BASIC SCI, DENT BRANCH, 6516 JOHN FREEMAN AVE, HOUSTON, TX 77030 (Reprint); SMITHKLINE BEECHAM PHARMACEUT, DEPT GENE EXPRESS SCI, KING OF PRUSSIA, PA 19406; UNIV TEXAS, MD ANDERSON CANC CTR, DEPT PATHOL, HOUSTON, TX 77030. CALCIFIED TISSUE INTERNATIONAL (**APR 1997**) Vol. 60, No. 4, pp. 380-386. ISSN: 0171-967X. Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Studies to assess osteopontin (OPN) localization in adult human bone using immunochemical techniques produce conflicting results due to variations in tissue processing or antibody immunoreactivity. The present study was designed to resolve these discrepancies using well-characterized antibodies and improved **antigen** detection. An anti-osteopontin (alpha-OPN) antiserum was developed that recognizes various **soluble** molecular weight forms of human OPN, including monomeric, cleaved, and dimerized products. An affinity column of full length recombinant human OPN (rOPN) coupled to support was used to purify alpha-OPN antibodies. Western analysis showed that the affinity-purified antibodies recognized numerous molecular weight forms of OPN. These antibodies were used to study the distribution of OPN in adult human bone using immunohistochemical techniques combined with an **antigen** retrieval protocol utilizing a newly developed **antigen** retrieval solution, Retriev-All(TM) (Bronco Technologies Inc, Pasadena, TX). Immunolocalization of OPN in archival bone specimens prior to **antigen** retrieval produced no demonstrable immunostaining even at high concentrations of alpha-OPN. Use of the **antigen** retrieval

protocol restored OPN immunoreactivity, with strong staining apparent in cement lines, osteoblasts, osteocytes, canaliculi, osteoid, and bone **matrix.** We conclude that **antigen** retrieval restores immunochemical recognition of OPN in archival specimens containing bone without increasing nonspecific binding.

L15 ANSWER 27 OF 36 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1996:410104 The Genuine Article (R) Number: UN044. Fibronectin co-stimulates via the alpha(5)beta(1) receptor IL-2, IL-4 production by splenic, granuloma lymphocytes of Schistosoma mansoni infected mice. Zhu Y (Reprint); Boros D L. WAYNE STATE UNIV, SCH MED, DEPT IMMUNOL & MICROBIOL, DETROIT, MI 48201. SCANDINAVIAN JOURNAL OF IMMUNOLOGY (**JUN 1996**) Vol. 43, No. 6, pp. 633-639. ISSN: 0300-9475. Publisher: BLACKWELL SCIENCE LTD, OSNEY MEAD, OXFORD, OXON, ENGLAND OX2 0EL. Language: English. *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB In murine Schistosomiasis mansoni, **soluble** worm egg **antigens** (SEA) induce L3T4(+) T helper cell-mediated chronic granulomatous inflammations around parasite eggs. Within the fully developed granuloma lymphocytes, macrophages, and eosinophils, fibroblasts are **embedded** in extracellular **matrix** (ECM) composed of fibronectin, laminin, glycosaminoglycans and collagens. The present study examined in vitro the putative co-stimulatory role of fibronectin (FN) in acute and chronic infection splenic and granuloma lymphocyte responses. Plate-bound FN enhanced the anti-CD3 MoAb stimulated normal and acute or chronic infection splenic lymphoproliferation by 20-32%. The co-stimulatory effect was evident in SEA stimulated acute but not chronic infection spleen cells. Proliferation of stimulated granuloma lymphocytes could not be up-regulated by immobilized FN. Plate-bound FN significantly enhanced IL-2 and IL-4 production by SEA-stimulated acute, but not chronic, infection granuloma lymphocytes. However, FN had no influence on the high level of IL-2, IL-4 production of anti-CD3 MoAb stimulated acute or chronic infection splenic or granuloma lymphocytes. Because in the **antigen**-stimulated acute infection spleen or granuloma cultures the co-stimulatory effect by FN was abrogated by the tripeptide (RGD) arg-gly asp, and anti alpha(5) beta(1) antibody, enhancement is attributed to signalling via the alpha(5) beta(1) integrin receptor of lymphocytes.

L15 ANSWER 28 OF 36 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1994:213718 The Genuine Article (R) Number: NE054. IMMUNOLOGICAL DETECTION OF THE CELLULAR RECEPTOR FOR UROKINASE PLASMINOGEN-ACTIVATOR. MIZUKAMI I F (Reprint); GARNIWAGNER B A; DEANGELO L M; LIEBERT M; FLINT A; LAWRENCE D A; COHEN R L; TODD R F. UNIV MICHIGAN, SCH MED, SIMPSON MEM INST, ANN ARBOR, MI 48109; UNIV MICHIGAN, SCH MED, DEPT INTERNAL MED, ANN ARBOR, MI 48109; UNIV MICHIGAN, SCH MED, DEPT SURG, ANN ARBOR, MI 48109; UNIV MICHIGAN, SCH MED, DIV UROL, ANN ARBOR, MI 48109; UNIV MICHIGAN, SCH MED, DEPT PATHOL, ANN ARBOR, MI 48109; UNIV CALIF SAN FRANCISCO, CANC RES INST, SAN FRANCISCO, CA 94143; UNIV MICHIGAN, CTR MED, SCH MED, DIV HEMATOL & ONCOL, TAUBMAN CTR 3119N, ANN ARBOR, MI 48109. CLINICAL IMMUNOLOGY AND IMMUNOPATHOLOGY (**APR 1994**) Vol. 71, No. 1, pp. 96-104. ISSN: 0090-1229. Publisher: ACADEMIC PRESS INC JNL-COMP SUBSCRIPTIONS, 525 B ST, STE 1900, SAN DIEGO, CA 92101-4495. Language: English. *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB The cellular receptor for urokinase plasminogen activator (uPA-R) is a monomeric phosphatidylinositol-linked glycoprotein (gp40-65) that may contribute to the invasive capacity of tumor and inflammatory cells by focusing the activity of urokinase (uPA) in converting plasminogen to plasmin, a serine protease capable of degrading extracellular **matrix** proteins. The further characterization of uPA-R has been facilitated by our recent development of a monoclonal antibody, anti-Mo3f, specific for uPA-R. This mAb bound to uPA-R expressed by phorbol myristate acetate-stimulated U-937 cells and by NIH-3T3 cells permanently transfected with uPA-R cDNA. In competitive binding assays, anti-Mo3f inhibited the binding of fluorescein-conjugated uPA ligand to uPA-R

expressed by U-937 cells and uPA-R transfectants; conversely, preexposure of cells to saturating quantities of exogenous uPA partially blocked the subsequent binding of anti-Mo3f mAb to uPA-R. Anti-Mo3f mAb was employed as the capture reagent in an ELISA for the quantitation of **soluble** forms of uPA-R (derived from U-937 cells and recombinant uPA-R) which had a sensitivity of approximately 4-12 ng/ml. Anti-Mo3f mAb was also applied as a serologic probe for the detection of uPA-R expressed by human tumor tissues. By immunoperoxidase staining, anti-Mo3f demonstrated positive tumor cell staining in 4 of 16 breast and 7 of 31 prostate carcinomas in formalin-fixed, paraffin-**embedded** specimens. These data indicate that the anti-Mo3f mAb detects an epitope proximate to or within the ligand binding domain (domain 1) of uPA-R and may be useful as a tool for the serologic detection of uPA-R in **soluble** form or associated with human tumors. (C) 1994 Academic Press, Inc.

L15 ANSWER 29 OF 36 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1991:538182 The Genuine Article (R) Number: GG127. IMMUNOGOLD ELECTRON-MICROSCOPY OF **SOLUBLE**-PROTEINS - LOCALIZATION OF BET-V-I MAJOR ALLERGEN IN ULTRA-THIN SECTIONS OF BIRCH POLLEN AFTER ANHYDROUS FIXATION TECHNIQUES. GROTE M (Reprint). UNIV MUNSTER, INST MED PHYS, HUFFERSTR 68, W-4400 MUNSTER, GERMANY (Reprint). JOURNAL OF HISTOCHEMISTRY & CYTOCHEMISTRY (**OCT 1991**) Vol. 39, No. 10, pp. 1395-1401. ISSN: 0022-1554. Publisher: HISTOCHEMICAL SOC INC, MT SINAI MEDICAL CENTER 19 EAST 98TH ST SUTIE 9G, NEW YORK, NY 10029. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB To localize the highly water-**soluble** major allergen Bet v I in ultra-thin sections of birch pollen, pollen grains were cracked, air-dried, and processed for electron microscopy using one of the following preparation techniques: fixation in aqueous p-formaldehyde + cetylpyridinium chloride; fixation in p-formaldehyde vapor; fixation in benzoquinone vapor; inert dehydration; or no fixation. Afterwards the pollen grains were **embedded** in Lowicryl K4M resin at low temperature. Ultra-thin sections were cut and incubated with a monoclonal antibody against Bet v I, followed by a gold-labeled secondary antibody. In some experiments, commercial rabbit IgG antibodies against birch pollen allergens were also used, followed by incubation with the protein A-gold complex. Bet v I could be localized only after vapor fixation and in the inert dehydrated specimens. Best preservation of ultrastructure and antigenicity was obtained after p-formaldehyde vapor fixation. Bet v I antibody binding sites were detected only in the cytoplasmic **matrix** of the pollen grain, never in the pollen wall. Commercial rabbit antibodies bound to cytoplasm and wall of all prepared specimens, even after aqueous fixation. This might be explained by the assumption that these antibodies recognize a variety of antigenic and allergenic structures, not all of which are so highly **soluble** as Bet v I.

L15 ANSWER 30 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

2004:788986 Document No. 142:140931 Human-compatible collagen **matrix** for prolonged and reversible systemic delivery of erythropoietin in mice from gene-modified marrow stromal cells. Eliopoulos, Nicoletta; Lejeune, Laurence; Martineau, Daniel; Galipeau, Jacques (Lady Davis Institute for Medical Research, McGill University, Jewish General Hospital, Montreal, QC, H3T 1E2, Can.). Molecular Therapy, 10(4), 741-748 (English) **2004.** CODEN: MTOHCK. ISSN: 1525-0016. Publisher: Elsevier.

AB Bone marrow stromal cells (MSCs) can be exploited therapeutically in transgenic cell therapy approaches. The authors' aim was to determine if gene-modified MSCs sequestered within a clin. approved, bovine type I collagen-based viscous bulking material could serve as a retrievable implant for systemic delivery of erythropoietin (Epo). To test this hypothesis, the authors **embedded** Epo-secreting MSCs in viscous collagen (Contigen) and determined the pharmacol. effect following implantation in normal mice. Primary MSCs from C57Bl/6 mice were retrovirally engineered to express murine Epo (mEpo) and 107 cells of a clonal

population secreting 3 U of mEpo/106 cells/24 h were implanted s.c. in normal C57Bl/6 mice with and without viscous collagen. Without **matrix** support, Hct rose to >70% for <25 days and returned to baseline by 60 days. However, in mice implanted with viscous collagen-**embedded** MSCs, the Hct rose to >70% up to 203 days postimplantation ($P < 0.0001$). In parallel, plasma Epo concentration was significantly increased ($P < 0.05$) for >145 days. Moreover, surgical removal of the viscous collagen organoid 24 days after implantation led to reduction of Hct to baseline levels within 14 days. In conclusion, this investigation demonstrates that mEpo+ MSCs **embedded** in a human-compatible viscous collagen **matrix** offers a potent, durable, and reversible approach for delivery of plasma-**soluble** therapeutic proteins.

L15 ANSWER 31 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

2004:454040 Document No. 142:154076 An experimental study on the difference of the antigenicity of xenogenic acellular dermal **matrix** (ADM). Jiang, Duyin; Chen, Bi; Jia, Chiyu; Tao, Ke (Xijing Hospital, Fourth Military Medical University, Xian, 710032, Peop. Rep. China). Zhonghua Shaoshang Zazhi, 19(3), 155-158 (Chinese) **2003.** CODEN: ZSZHA5. ISSN: 1009-2587. Publisher: Zhonghua Shaoshang Zazhi Bianjibu.

AB The split-thickness skin sheet from swine was processed by trypsin and Triton X-100 to make xeno-acellular dermal **matrix** (ADM). Twenty-five Japanese white rabbits were divided into 5 groups, i.e. xeno-ADM1 (conjugated with glutaraldehyde), xeno-ADM2 (conjugated with network), xeno-ADM3 (no conjugation, as control), xeno-ADM4 (conjugated) and allo-ADM (no conjugated as control). In all groups, the ADMs were **embedded** into the s.c. place of rabbits' ear and back, after that the rabbits were pre-sensitized by xeno-ADM **soluble** protein **antigen** injections. The titers of anti ADMs antibody in rabbit serum were monitored during 2-32 post-operative weeks and the histol. changes of the **embedded** ADMs were observed grossly and microscopically. The serum titers of anti-xeno-ADM in xeno-ADM4 group was the highest. Regardless of the sensitizing effects, the titers in all groups ranged as follows: xeno-ADM3 >xeno-ADM2 >xeno-ADM1. About 40% serum samples in allo-ADM group exhibited pos. anti-allo-ADM protein antibodies. Histol., evident and lasting inflammatory reaction could be found in the xeno-ADM grafting sites, which was much stronger than that in allo-ADM group. The degradation and absorption gradient of ADM was ranked as follow: xeno-ADM3 >xeno-ADM2 >xeno-ADM4 >xeno-ADM1 >Allo-ADM. Foreign body megalocytic reaction might evoke in the surrounding of conjugated ADM. The immunogenicity in xeno-ADM was stronger than that in allo-ADM, which could induce the host to develop immune reaction restricted by IgG. Large sheets of degenerated ADM implants could lower down the **antigen**-antibody reaction and ameliorate the structural destroying and degeneration absorption of ADM induced by inflammatory immune reaction.

L15 ANSWER 32 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

1998:159746 Document No. 128:268746 Assembly of basement membrane in vitro by cooperation between alveolar epithelial cells and pulmonary fibroblasts. Furuyama, Akiko; Kimata, Koji; Mochitate, Katsumi (Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, 305, Japan). Cell Structure and Function, 22(6), 603-614 (English) **1997.** CODEN: CSFUDY. ISSN: 0386-7196. Publisher: Japan Society for Cell Biology.

AB To investigate basement membrane formation by cooperation between pneumocytes and pulmonary fibroblasts, the authors cultured type II alveolar epithelial cells obtained from rats transfected with SV40-large T **antigen** gene (SV40-T2 cells) on type I collagen **matrixes**. On fibroblasts-**embedded** gel (T2-Fgel), SV40-T2 cells ultrastructurally formed a continuous and thin layer of lamina densa, while on collagen gel without fibroblasts (T2-gel) SV40-T2 cells produced only discontinuous and diffuse deposits. Stripping SV40-T2 cells off the tissues by H_2O_2 treatment revealed a continuous and plane surface of

lamina densa assembled on the T2-Fgel tissue, whereas only amorphous deposits appeared on the T2-gel tissue. Immunolocalization of major basement membrane components showed that type IV collagen, laminin, perlecan and entactin (nidogen) were continuously integrated on the lamina densa in T2-Fgel. In T2-gel, all these components were discontinuously distributed beneath SV40-T2 cells. The contribution of pulmonary fibroblasts to the assembly of basement membrane through reorganization of collagen **matrix** and/or **soluble** factors was examined by the cultured of SV40-T2 cells on the freeze-thawed fibroblast-tissue and/or with the fibroblast-conditioned medium. Both SV40-T2 cells on the freeze-thawed fibroblast-tissue and SV40-T2 cells in T2-gel in the fibroblast-conditioned medium failed to produce a lamina densa. SV40-T2 cells could assemble a lamina densa only on the freeze-thawed fibroblast-tissue in the fibroblast-conditioned medium. These results show that the basement membrane components are assembled to a lamina densa by combination of the reorganization of collagen **matrix** and the supply of **soluble** factors by pulmonary fibroblasts.

L15 ANSWER 33 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

1997:217031 Document No. 126:314434 Improved immunohistochemical staining of osteopontin (OPN) in paraffin-**embedded** archival bone specimens following **antigen** retrieval: anti-human OPN antibody recognizes multiple molecular forms. Devoll, R. E.; Pinero, G. J.; Appelbaum, E. R.; Dul, E.; Troncoso, P.; Butler, W. T.; Farach-Carson, M. C. (Department of Basic Sciences, Health Science Center, The University of Texas-Houston, Dental Branch, Houston, TX, 77030, USA). Calcified Tissue International, 60(4), 380-386 (English) **1997**. CODEN: CTINDZ. ISSN: 0171-967X. Publisher: Springer.

AB Studies to assess osteopontin (OPN) localization in adult human bone using immunochem. techniques produce conflicting results due to variations in tissue processing or antibody immunoreactivity. The present study was designed to resolve these discrepancies using well-characterized antibodies and improved **antigen** detection. An anti-osteopontin (α-OPN) antiserum was developed that recognizes various **sol** . mol. weight forms of human OPN, including monomeric, cleaved, and dimerized products. An affinity column of full length recombinant human OPN (rOPN) coupled to support was used to purify α-OPN antibodies. Western anal. showed that the affinity-purified antibodies recognized numerous mol. weight forms of OPN. These antibodies were used to study the distribution of OPN in adult human bone using immunohistochem. techniques combined with an **antigen** retrieval protocol utilizing a newly developed **antigen** retrieval solution, Retriev-All (Bronco Technologies Inc, Pasadena, TX). Immunolocalization of OPN in archival bone specimens prior to **antigen** retrieval produced no demonstrable immunostaining even at high concns. of α-OPN. Use of the **antigen** retrieval protocol restored OPN immunoreactivity, with strong staining apparent in cement lines, osteoblasts, osteocytes, canaliculi, osteoid, and bone **matrix.** We conclude that **antigen** retrieval restores immunochem. recognition of OPN in archival specimens containing bone without increasing nonspecific binding.

L15 ANSWER 34 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

1996:383457 Document No. 125:56164 Fibronectin co-stimulates via the α5β1 receptor IL-2, IL-4 production by splenic, granuloma lymphocytes of Schistosoma mansoni infected mice. Zhu, Y.; Boros, D. L. (School Medicine, Wayne State University, Detroit, MI, 48201, USA). Scandinavian Journal of Immunology, 43(6), 633-639 (English) **1996** . CODEN: SJIMAX. ISSN: 0300-9475. Publisher: Blackwell.

AB In murine Schistosomiasis mansoni, **soluble** worm egg **antigens** (SEA) induce L3T4+ T helper cell-mediated chronic granulomatous inflammations around parasite eggs. Within the fully developed granuloma lymphocytes, macrophages, and eosinophils, fibroblasts are **embedded** in extracellular **matrix** (ECM) composed of fibronectin, laminin, glycosaminoglycans and collagens. The present study examined in vitro the putative co-stimulatory role of fibronectin (FN) in

acute and chronic infection splenic and granuloma lymphocyte responses. Plate-bound FN enhanced the anti-CD3 MoAb stimulated normal and acute or chronic infection splenic lymphoproliferation by 20-32%. The co-stimulatory effect was evident in SEA stimulated acute but not chronic infection spleen cells. Proliferation of stimulated granuloma lymphocytes could not be up-regulated by immobilized FN. Plate-bound FN significantly enhanced IL-2 and IL-4 production by SEA-stimulated acute, but not chronic, infection granuloma lymphocytes. However, FN had no influence on the high level of IL-2, IL-4 production of anti-CD3 MoAb stimulated acute or chronic infection splenic or granuloma lymphocytes. Because in the **antigen**-stimulated acute infection spleen or granuloma cultures the co-stimulatory effect by FN was abrogated by the tripeptide (RGD) arg-gly-asp, and anti α5β1 antibody, enhancement is attributed to signaling via the α5β1 integrin receptor of lymphocytes.

L15 ANSWER 35 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

1987:192223 Document No. 106:192223 Usefulness of the immunogold technique in quantitation of a **soluble** protein in ultra-thin sections. Posthuma, George; Slot, Jan W.; Geuze, Hans J. (Med. Fac., Univ. Utrecht, Utrecht, Neth.). Journal of Histochemistry and Cytochemistry, 35(4), 405-10 (English) **1987.** CODEN: JHCYAS. ISSN: 0022-1554.

AB A model system was used to study whether measurements of absolute local **antigen** concns. at the electron microscopic level are feasible by counting immunogold labeling d. in ultra-thin sections. The model system consisted of a **matrix** of a variable concentration of gelatin, which was mixed with given concns. of rat pancreas amylase and fixed according to various fixation protocols. With a relatively mild fixation, there was no clear proportionality between anti-amylase gold labeling and amylase concentration in ultra-thin cryosections. This was presumably due to uncontrolled loss of amylase from the sections. After stronger fixation with 2% glutaraldehyde for 4 h, labeling d. reflected the amylase concentration very well. **Matrix** (gelatin) d. influenced labeling d. A low gelatin concentration of 5% allowed penetration of immunoreagents into the cryosection, resulting in a high and variable labeling d. In gelatin concns. of 10% and 20%, labeling d. was lower but proportional to amylase concentration To establish an equal (minimal) penetration of immunoreagents, model blocks were **embedded** with different **matrix** densities in polyacrylamide (PAA). In ultra-thin cryosections of these PAA-**embedded** blocks, anti-amylase labeling was proportional to amylase concentration even at a low (5%) gelatin concentration Anti-amylase labeling in ultra-thin sections from Lowicryl K4M low temperature-**embedded** blocks was higher than in PAA sections, but the results were less consistent and depended to some extent on **matrix** d. These results, together with the earlier observation that acrylamide completely penetrates intracellular compartments, demonstrate that it is possible to measure true intracellular concns. of **soluble** proteins in situ using ultra-thin cryosections of PAA-**embedded** tissue.

L15 ANSWER 36 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

1986:221098 Document No. 104:221098 Electron microscopic immunocytochemistry of interstitial retinol-binding protein in vertebrate retinas. Schneider, Barbara G.; Papermaster, David S.; Liou, Gregory I.; Fong, Shao Ling; Bridges, C. David (Dep. Pathol., Yale Med. Sch., West Haven, CT, USA). Investigative Ophthalmology & Visual Science, 27(5), 679-88 (English) **1986.** CODEN: IOVSDA. ISSN: 0146-0404.

AB Interstitial retinol-binding protein (IRBP) is a **soluble** glycoprotein found in the interphotoreceptor **matrix** (IPM) and implicated in shuttling retinol between retina and pigment epithelium (PE) cells. The distribution of IRBP was studied by electron microscopic (EM) immunocytochem. Thin sections of Lowicryl K4M-**embedded** Rana pipiens, Xenopus laevis, bovine, and human retinas were labeled sequentially with affinity-purified rabbit antibovine IRBP, biotinyl-sheep antirabbit F(Ab')2, and avidin-ferritin, or with avidin and biotinyl-ferritin. **Antigen** was in the interphotoreceptor space

and intercalated into the narrow spaces between PE cell microvilli. IRBP penetration between PE cells was delimited abruptly by the PE junctional complexes. IRBP was also observed in small vacuoles in the apical cytoplasm of PE cells and in PE cell phagosomes that contained IRBP surrounding ingested rod tips. IPM was heavily but inhomogeneously labeled. **Antigen** was usually deposited along the rod and cone outer segment plasma membranes in a confluent layer, but sometimes it was distributed in large (.apprx.0.2 μm thick) clumps. In bovine and human retinas, the connecting cilium was ensheathed by **antigen** at high d., but an unlabeled halo surrounded its plasma membrane. The apical plasma membrane of the inner segment aligned along the connecting cilium was also densely coated by **antigen.** In none of the 4 species examined was Golgi labeling present. In bovine retinas, labeled vacuoles (granules) in the myoid region were found in very low nos. (15 vacuoles in 358 rod cells). Amphibian retinas also contained only small nos. of myoid vacuoles labeled by anti-IRBP. Absence of antibody binding to intracellular sites of synthesis in any of the cells that abut the interphotoreceptor **matrix** suggests that the **antigen** may be masked prior to its release from the synthetic cell(s) or that its level is below limits of detection.

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L16       2978 (SCHOLZ M?/AU)

=> s l16 and matrix
L17         80 L16 AND MATRIX

=> s l17 and stimulation
L18          4 L17 AND STIMULATION

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PROCESSING COMPLETED FOR L18
L19           2 DUP REMOVE L18 (2 DUPLICATES REMOVED)

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L19  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2008 ACS on STN
2005:975659   Document No. 143:254039  Formulation of leukocyte-
     stimulation matrixes for vaccination and the
     determination of T-cell subtypes.  Scholz, Martin (Leukocare
     GmbH, Germany).  Eur. Pat. Appl. EP 1571204 A1 20050907, 15 pp.
     DESIGNATED STATES: R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL,
     SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL,
     SK.  (German).  CODEN: EPXXDW.  APPLICATION: EP 2004-5177 20040304.
AB   The invention concerns leukocyte-stimulation matrix
     and/or the induction of immunotolerance by using (a) one or more carriers;
     (b) a soluble matrix for embedding one or more components for
     leukocyte-stimulation and/or induction of immunotolerance; (c)
     one or more components for leukocyte-stimulation and/or
     induction of immunotolerance that are embedded in the soluble matrix
     .  Further ingredients are coupling agents for binding the carrier with
     the components for leukocyte-stimulation and/or induction of
     immunotolerance.  Typical stimulating agents are antigens, MHC antigens,
     cell debris, viruses, etc.  Polyurethane, polystyrene, and medical metals,
     glasses, natural products are the carriers.  As coupling agents bromocyan,
     agarose, silane, etc. are used; matrixes are starch, cellulose,
     glycogen, polyethylene glycol.

L19  ANSWER 2 OF 2     MEDLINE on STN                    DUPLICATE 1
2003537240.    PubMed ID: 14618385.  Dose-dependent effects of combined IGF-I
     and TGF-beta1 application in a sheep cervical spine fusion model.
     Kandziora F; Pflugmacher R; Scholz M; Schafer J; Schollmeier G;
     Schmidmaier G; Duda G; Raschke M; Haas N P. (Unfall- und
     Wiederherstellungschirurgie, Universitatsklinikum Charite der
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Humboldt-Universitat Berlin, Campus Virchow-Klinikum, Augustenburgerplatz 1, 13353 Berlin, Germany.. frank.kandziora@charite.de) . European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society, (2003 Oct) Vol. 12, No. 5, pp. 464-73. Electronic Publication: 2002-11-08. Journal code: 9301980. ISSN: 0940-6719. Pub. country: Germany: Germany, Federal Republic of. Language: English.

AB Combined IGF-I and TGF-beta1 application by a poly-(D,L-lactide) (PDLLA) coated interbody cage has proven to promote spine fusion. The purpose of this study was to determine whether there is a dose-dependent effect of combined IGF-I and TGF-beta1 application on intervertebral bone **matrix** formation in a sheep cervical spine fusion model. Thirty-two sheep underwent C3/4 discectomy and fusion. Stabilisation was performed using a titanium cage coated with a PDLLA carrier including no growth factors in group 1 (n=8), 75 micro g IGF-I plus 15 micro g TGF-beta1 in group 2 (n=8), 150 micro g IGF-I plus 30 micro g TGF-beta1 in group 3 (n=8) and 300 micro g IGF-I plus 60 micro g TGF-beta1 in group 4 (n=8). Blood samples, body weight and temperature were analysed. Radiographic scans were performed pre- and postoperatively and after 1, 2, 4, 8, and 12 weeks. At the same time points, disc space height and intervertebral angle were measured. After 12 weeks, the animals were killed and fusion sites were evaluated using quantitative computed tomographic (CT) scans to assess bone mineral density, bone mineral content and bony callus volume. Biomechanical testing was performed and range of motion, and neutral and elastic zones were determined. Histomorphological and histomorphometrical analysis were carried out and polychrome sequential labelling was used to determine the time frame of new bone formation. In comparison to the group without growth factors (group 1), the medium- and high-dose growth factor groups (groups 3 and 4) demonstrated a significantly higher bony callus volume on CT scans, a higher biomechanical stability, an advanced interbody bone **matrix** formation in histomorphometrical analysis, and an earlier bone **matrix** formation on fluorochrome sequence labelling. Additionally, the medium- and high-dose growth factor groups (groups 3 and 4) demonstrated a significantly higher bony callus volume, a higher biomechanical stability in rotation, and an advanced interbody bone **matrix** formation in comparison to the low-dose growth factor group (group 2). No significant difference could be determined between the medium- and the high-dose growth factor groups (groups 3 and 4, respectively). The local application of IGF-I and TGF-beta1 by a PDLLA-coated cage significantly improved results of interbody bone **matrix** formation in a dose-dependent manner. The best dose-response relationship was achieved with the medium growth factor dose (150 micro g IGF-I and 30 micro g TGF-beta1). With an increasing dose of these growth factors, no further **stimulation** of bone **matrix** formation was observed. Although these results are encouraging, safety issues of combined IGF-I and TGF-beta1 application for spinal fusion still have to be addressed.

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L20 1 L17 AND TOLERANCE

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L20 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
2005:975659 Document No. 143:254039 Formulation of leukocyte-stimulation **matrixes** for vaccination and the determination of T-cell subtypes. **Scholz, Martin** (Leukocare GmbH, Germany). Eur. Pat. Appl. EP 1571204 A1 20050907, 15 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK. (German). CODEN: EPXXDW. APPLICATION: EP 2004-5177 20040304.

AB The invention concerns leukocyte-stimulation **matrix** and/or the induction of immunotolerance by using (a) one or more carriers; (b) a soluble

matrix for embedding one or more components for leukocyte-stimulation and/or induction of immunotolerance; (c) one or more components for leukocyte-stimulation and/or induction of immunotolerance that are embedded in the soluble **matrix.** Further ingredients are coupling agents for binding the carrier with the components for leukocyte-stimulation and/or induction of immunotolerance. Typical stimulating agents are antigens, MHC antigens, cell debris, viruses, etc. Polyurethane, polystyrene, and medical metals, glasses, natural products are the carriers. As coupling agents bromocyan, agarose, silane, etc. are used; **matrixes** are starch, cellulose, glycogen, polyethylene glycol.

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PROCESSING COMPLETED FOR L17
L21 32 DUP REMOVE L17 (48 DUPLICATES REMOVED)

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2 FILES SEARCHED...
L22 23 L21 AND PD<20040304

=> d l22 1-23 cbib abs

L22 ANSWER 1 OF 23 MEDLINE on STN
2004562595. PubMed ID: 15534403. Bioabsorbable interbody cages in a sheep cervical spine fusion model. Kandziora Frank; Pflugmacher Robert; **Scholz Matti**; Eindorf Tanja; Schnake Klaus J; Haas Norbert P. (Unfall- und Wiederherstellungschirurgie, Universitatsklinikum Charite der Humboldt-Universitat Berlin, Campus Virchow-Klinikum, Germany.. frank.kandziora@charite.de) . Spine, **(2004 Sep 1)** Vol. 29, No. 17, pp. 1845-55; discussion 1856. Journal code: 7610646. E-ISSN: 1528-1159. Pub. country: United States. Language: English.
AB STUDY DESIGN: An experimental study using a sheep cervical spine interbody fusion model. OBJECTIVES: To compare interbody fusion of an autologous tricortical iliac crest bone graft with two bioabsorbable cages and to determine whether there are differences between the three interbody fusion techniques in 1) the ability to preserve postoperative distraction, 2) the biomechanical stability, and 3) the histologic characteristics of intervertebral bone **matrix** formation. SUMMARY AND BACKGROUND DATA: Bioabsorbable cages would be beneficial compared with metallic cages; however, currently no suitable bioabsorbable interbody fusion cage is available. METHOD: Twenty-four sheep underwent C3/C4 discectomy and fusion. The following stabilization techniques were used: Group 1) autologous tricortical iliac crest bone graft (n = 8); Group 2) bioabsorbable cage made of 70/30 poly(l-lactide-co-d,l-lactide) (experimental) filled with autologous cancellous bone graft (n = 8); Group 3) bioabsorbable cage made of a polymer-calciumphosphate composite (Biomet Europe, Dordrecht, The Netherlands) filled with autologous cancellous bone graft (n = 8). Radiographic scans to determine disc space height were performed before and after surgery and after 1, 2, 4, 8, and 12 weeks, respectively. After 12 weeks, animals were killed, and fusion sites were evaluated using functional radiographic views in flexion and extension. Quantitative computed tomographic scans were used to assess bone mineral density, bone mineral content, and bony callus volume. Biomechanical testing was performed in flexion, extension, axial rotation, and lateral bending to determine stiffness, ROM, and neutral and elastic zone. Histomorphological and histomorphometrical analysis were performed to evaluate fusion and foreign body reactions associated with the bioabsorbable cages. RESULTS: Over a 12-week period, the polymer-calciumphosphate composite cage showed significantly higher values for disc space height compared with the bone graft and the poly(l-lactide-co-d,l-lactide) cage. Additionally, the polymer-calciumphosphate composite cage demonstrated a significantly higher stiffness and lower ROM, neutral zone, and elastic zone in axial rotation and lateral bending than any other group. However, quantitative

computed tomographic scans demonstrated cracks in six of the eight polymer-calciumphosphate composite cages after 12 weeks. Histologically, the highest bone volume/total volume ratio and the highest fusion rate were found in the polymer-calciumphosphate composite cage group. Although the poly(l-lactide-co-d,l-lactide) cage showed grade I through III foreign body reactions in all fusion areas, only two animals developed grade I foreign body reactions with the polymer-calciumphosphate composite cage. CONCLUSION: After 12 weeks, there was no significant difference between the bioabsorbable poly(l-lactide-co-d,l-lactide) cage and the tricortical bone graft. In comparison to the tricortical bone graft, the bioabsorbable polymer-calciumphosphate composite cage showed significantly better distractive properties, a significantly higher biomechanical stiffness, and an advanced interbody fusion; however, six of eight polymer-calciumphosphate composite cages cracked. Although the fate of the foreign body reactions and the cracks is currently unclear for both bioabsorbable cages, the early appearance of large osteolysis associated with use of the poly(l-lactide-co-d,l-lactide) cage allows skepticism regarding the value of this bioabsorbable implant.

L22 ANSWER 2 OF 23 MEDLINE on STN

2004530284. PubMed ID: 15146281. [Biodegradable cage. Osteointegration in spondylodesis of the sheep cervical spine]. Biodegradierbarer Cage. Osteointegration bei Spondylodese der Schafhalswirbelsaule. Pflugmacher R; Eindorf T; **Scholz M**; Gumnior S; Krall C; Schleicher P; Haas N P; Kandziora F. (Unfall- und Wiederherstellungschirurgie, Universitatsklinikum Charite, Humboldt-Universitat, Campus Virchow-Klinikum, Berlin.. robert.pflugmacher@charite.de) . Der Chirurg; Zeitschrift fur alle Gebiete der operativen Medizen, **(2004 Oct)** Vol. 75, No. 10, pp. 1003-12. Journal code: 16140410R. ISSN: 0009-4722. Pub. country: Germany: Germany, Federal Republic of. Language: German.

AB Bioabsorbable implants are commonplace in knee and shoulder surgery. Bioabsorbable poly(l-lactide-co-D,L-lactide) (PLDLLA) cage devices have potential benefits over autologous tricortical iliac crest bone graft and metallic cages for cervical spine interbody fusion. The purpose of this study was to compare interbody fusion of an autologous tricortical iliac crest bone graft with that of a bioabsorbable cage using a sheep cervical spine interbody fusion model. This study was designed to determine differences in (1) the ability to preserve postoperative distraction, (2) biomechanical stability, and (3) histological characteristics of intervertebral bone **matrix** formation. Sixteen full-grown Merino sheep underwent C3/4 discectomy and fusion. After 12 weeks, there was no significant difference between the results with the bioabsorbable PLDLLA cages and tricortical bone grafts. The cage also did not show advanced interbody fusion but did, however, show large osteolysis, which allows skepticism regarding the value of this bioabsorbable implant.

L22 ANSWER 3 OF 23 MEDLINE on STN

2003537240. PubMed ID: 14618385. Dose-dependent effects of combined IGF-I and TGF-beta1 application in a sheep cervical spine fusion model. Kandziora F; Pflugmacher R; **Scholz M**; Schafer J; Schollmeier G; Schmidmaier G; Duda G; Raschke M; Haas N P. (Unfall- und Wiederherstellungschirurgie, Universitatsklinikum Charite der Humboldt-Universitat Berlin, Campus Virchow-Klinikum, Augustenburgerplatz 1, 13353 Berlin, Germany.. frank.kandziora@charite.de) . European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society, **(2003 Oct)** Vol. 12, No. 5, pp. 464-73. Electronic Publication: 2002-11-08. Journal code: 9301980. ISSN: 0940-6719. Pub. country: Germany: Germany, Federal Republic of. Language: English.

AB Combined IGF-I and TGF-beta1 application by a poly-(D,L-lactide) (PDLLA) coated interbody cage has proven to promote spine fusion. The purpose of this study was to determine whether there is a dose-dependent effect of combined IGF-I and TGF-beta1 application on intervertebral bone **matrix** formation in a sheep cervical spine fusion model.

Thirty-two sheep underwent C3/4 discectomy and fusion. Stabilisation was performed using a titanium cage coated with a PDLLA carrier including no growth factors in group 1 (n=8), 75 micro g IGF-I plus 15 micro g TGF-beta1 in group 2 (n=8), 150 micro g IGF-I plus 30 micro g TGF-beta1 in group 3 (n=8) and 300 micro g IGF-I plus 60 micro g TGF-beta1 in group 4 (n=8). Blood samples, body weight and temperature were analysed. Radiographic scans were performed pre- and postoperatively and after 1, 2, 4, 8, and 12 weeks. At the same time points, disc space height and intervertebral angle were measured. After 12 weeks, the animals were killed and fusion sites were evaluated using quantitative computed tomographic (CT) scans to assess bone mineral density, bone mineral content and bony callus volume. Biomechanical testing was performed and range of motion, and neutral and elastic zones were determined. Histomorphological and histomorphometrical analysis were carried out and polychrome sequential labelling was used to determine the time frame of new bone formation. In comparison to the group without growth factors (group 1), the medium- and high-dose growth factor groups (groups 3 and 4) demonstrated a significantly higher bony callus volume on CT scans, a higher biomechanical stability, an advanced interbody bone **matrix** formation in histomorphometrical analysis, and an earlier bone **matrix** formation on fluorochrome sequence labelling. Additionally, the medium- and high-dose growth factor groups (groups 3 and 4) demonstrated a significantly higher bony callus volume, a higher biomechanical stability in rotation, and an advanced interbody bone **matrix** formation in comparison to the low-dose growth factor group (group 2). No significant difference could be determined between the medium- and the high-dose growth factor groups (groups 3 and 4, respectively). The local application of IGF-I and TGF-beta1 by a PDLLA-coated cage significantly improved results of interbody bone **matrix** formation in a dose-dependent manner. The best dose-response relationship was achieved with the medium growth factor dose (150 micro g IGF-I and 30 micro g TGF-beta1). With an increasing dose of these growth factors, no further stimulation of bone **matrix** formation was observed. Although these results are encouraging, safety issues of combined IGF-I and TGF-beta1 application for spinal fusion still have to be addressed.

L22 ANSWER 4 OF 23 MEDLINE on STN

2002634699. PubMed ID: 12395162. [Experimental fusion of the sheep cervical spine. Part II: Effect of growth factors and carrier systems on interbody fusion]. Experimentelle Spondylodese der Schafshalswirbelsaule Teil 2: Der Effekt von Wachstumsfaktoren und Carrier-Systemen auf die intervertebrale Fusion. Kandziora F; **Scholz M**; Pflugmacher R; Krummrey G; Schollmeier G; Schmidmaier G; Schnake K J; Duda G; Raschke M; Haas N P. (Unfall und Wiederherstellungschirurgie, Universitatsklinikum Charite der Humboldt-Universitat Berlin, Campus Virchow-Klinikum, Germany.. frank.kandziora@charite.de) . Der Chirurg; Zeitschrift fur alle Gebiete der operativen Medizen, **(2002 Oct)** Vol. 73, No. 10, pp. 1025-38. Journal code: 16140410R. ISSN: 0009-4722. Pub. country: Germany: Germany, Federal Republic of. Language: German.

AB INTRODUCTION: A sheep cervical spine interbody fusion model was used to determine the effect of different carriers and growth factors on interbody bone **matrix** formation. The purpose of this study was to compare the efficacy and safety of combined IGF-I and TGF-beta1 application with BMP-2 application in spinal fusion. Additionally, a new poly (D, L-lactide) carrier system was compared to a collagen sponge carrier. METHOD: Forty sheep underwent C3/4 discectomy and fusion: group 1: titanium cage (n=8), group 2: titanium cage coated with a PDLLA carrier (n=8), group 3: titanium cage coated with a PDLLA carrier including BMP-2 (n=8), group 4: titanium cage with a collagen carrier including BMP-2 (n=8), and group 5: titanium cage coated with a PDLLA carrier including IGF-I and TGF-beta1 (n=8). Blood samples, body weight, and temperature were analyzed. Radiographic scans were performed pre- and postoperatively and after 1, 2, 4, 8, and 12 weeks, respectively. At the same time points, disc space height (DSH) and intervertebral angle (IVA) were

measured. After 12 weeks the animals were killed and fusion sites were evaluated using functional radiographic views in flexion and extension. Quantitative computed tomographic scans (QCT) were performed to assess bone mineral density (BMD), bone mineral content (BMC), and bony callus volume (BCV). Biomechanical testing was carried out in flexion, extension, axial rotation, and lateral bending. Range of motion (ROM), neutral zone (NZ), and elastic zone (EZ) were determined. Histomorphological and histomorphometrical analyses were performed and polychrome sequential labeling was used to determine the time frame of new bone formation. RESULTS: In comparison to the non-coated cages, all PDLLA-coated cages showed significantly higher values for BMD of the callus and bone volume/total volume ratio. In comparison to the cage groups (groups 1 and 2), the cage plus BMP-2 (groups 3 and 4) and the cage plus IGF-I and TGF-beta1 group (group 5) demonstrated a significantly higher fusion rate in radiographic findings, a higher biomechanical stability, an advanced interbody fusion in histomorphometric analysis, and an accelerated interbody fusion on fluorochrome sequence labeling. BMP-2 application by the PDLLA carrier system (group 3) demonstrated significantly higher bony callus volume than BMP-2 application by a collagen sponge carrier (group 4). The BMP-2 group (group 3) showed significantly lower residual motion on functional radiographic evaluation and higher intervertebral bone **matrix** formation on fluorochrome sequence labeling at 9 weeks in comparison to the IGF-I/TGF-beta1 group (group 5). In contrast, the IGF-I/TGF-beta1 group (group 5) showed a significantly higher bone mineral density of the callus than the BMP-2 group (group 3). CONCLUSION: PDLLA coating of cervical spine interbody fusion cages as a delivery system for growth factors was effective and safe. In comparison to the collagen sponge carrier, the new PDLLA carrier system was able to improve results of interbody bone **matrix** formation. Both growth factors (BMP-2 and combined IGF-I and TGF-beta1) significantly accelerated results of interbody fusion. Based on these preliminary results, the combined IGF-I/TGF-beta1 application yields results equivalent to BMP-2 application at an early time in anterior sheep cervical spine fusion.

L22 ANSWER 5 OF 23 MEDLINE on STN

2002626184. PubMed ID: 12384758. Comparison of BMP-2 and combined IGF-I/TGF-ss1 application in a sheep cervical spine fusion model. Kandziora F; Pflugmacher R; **Scholz M**; Knispel C; Hiller T; Schollmeier G; Bail H; Schmidmaier G; Duda G; Raschke M; Haas N P. (Department of Trauma and Reconstructive Surgery, Charite University Hospital of the Humboldt University Berlin, Campus Virchow-Klinikum, Augustenburgerplatz 1, 13353 Berlin, Germany.. frank.kandziora@charite.de) . European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society, **(2002 Oct)** Vol. 11, No. 5, pp. 482-93. Electronic Publication: 2002-03-14. Journal code: 9301980. ISSN: 0940-6719. Pub. country: Germany: Germany, Federal Republic of. Language: English.

AB Growth factors have proven to promote spine fusion. However, no comparative evaluation of growth factors in spinal fusion has yet been performed. The purpose of this study was to compare the efficacy and safety of combined IGF-I and TGF-ss1 application with BMP-2 application and autologous cancellous bone graft at an early time point in a sheep cervical spine fusion model. Thirty-two sheep underwent C3/4 discectomy and fusion. They were divided into four groups, according to their treatment: group 1, titanium cage (n=8); group 2, titanium cage filled with autologous cancellous iliac crest bone grafts (n=8); group 3, titanium cage coated with a poly-(D,L-lactide) (PDLLA) carrier including BMP-2 (5% w/w) (n=8); group 4, titanium cage coated with a PDLLA carrier including IGF-I (5% w/w) and TGF-ss1 (1% w/w) (n=8). Blood samples, body weight and temperature were analysed. Radiographic scans were performed pre- and postoperatively and after 1, 2, 4, 8 and 12 weeks. At the same time points, disc space height and intervertebral angle were measured. After 12 weeks, the animals were killed and fusion sites were evaluated

using functional radiographic views in flexion and extension. Quantitative computed tomographic scans were performed to assess bone mineral density, bone mineral content and bony callus volume. Biomechanical testing was carried out and the values for range of motion, and neutral and elastic zone were determined. Histomorphological and histomorphometrical analysis were performed and polychrome sequential labelling was used to determine the time frame of new bone formation. The results showed that, in comparison to the group treated with the cage alone (group 1), the cage plus BMP-2 group (group 3) and the cage plus IGF-I and TGF-ss1 group (group 4) demonstrated a significantly higher fusion rate in radiographic findings, a higher biomechanical stability, a more advanced interbody fusion in histomorphometrical analysis, and an accelerated interbody fusion on fluorochrome sequence labelling. In comparison to the bone graft group (group 2), the BMP-2 (group 3) and IGF-I/TGF-ss1 group (group 4) showed significantly less residual motion on functional radiographic evaluation, higher bone mineral density of the callus and higher biomechanical stability in extension, rotation and bending. The BMP-2 group showed significantly less residual motion on functional radiographic evaluation and higher intervertebral bone **matrix** formation on fluorochrome sequence labelling at 9 weeks in comparison to the IGF-I/TGF-ss1 group. In contrast, the IGF-I/TGF-ss1 group showed a significantly higher bone mineral density of the callus than the BMP-2 group. In comparison to the autologous cancellous bone graft group, both growth factors (BMP-2 and combined IGF-I and TGF-ss1) significantly improved the biomechanical results of interbody fusion. No systemic side effects were observed for either growth factor. On the basis of these preliminary results, it would appear that combined IGF-I/TGF-ss1 application yields equivalent results to BMP-2 application at an early time point in anterior sheep cervical spine fusion.

L22 ANSWER 6 OF 23 MEDLINE on STN

2002486563. PubMed ID: 12297957. [Experimental fusion of the sheep cervical spine. Part I: Effect of cage design on interbody fusion]. Experimentelle Spondylodese der Schafshalswirbelsaule Teil 1: Der Effekt des Cage-Designs auf die intervertebrale Fusion. Kandziora F; Pflugmacher R; **Scholz M**; Schafer J; Schollmeier G; Schnake K J; Bail H; Duda G; Haas N P. (Unfall- und Wiederherstellungschirurgie, Campus Virchow-Klinikum, Universitatsklinikum Charite der Humboldt-Universitat Berlin, Germany.. frank.kandziora@charite.de) . Der Chirurg; Zeitschrift fur alle Gebiete der operativen Medizen, **(2002 Sep)** Vol. 73, No. 9, pp. 909-17. Journal code: 16140410R. ISSN: 0009-4722. Pub. country: Germany: Germany, Federal Republic of. Language: German.

AB INTRODUCTION: There has been a rapid increase in the use of interbody fusion cages as an adjunct to spondylodesis, although experimental data are lacking. A sheep cervical spine interbody fusion model was used to determine the effect of different cage design parameters (endplate-implant contact area, maximum contiguous pore) on interbody fusion. MATERIAL AND METHOD: IN VITRO EVALUATION: 24 sheep cadaver specimens (C2-C5) were tested in flexion, extension, axial rotation, and lateral bending with a nondestructive flexibility method using a nonconstrained testing apparatus. Four different groups were examined: (1) control group (intact) (n=24), (2) autologous tricortical iliac crest bone graft (n=8), (3) Harms cage (n=8), and (4) SynCage-C (n=8). IN VIVO EVALUATION: 24 sheep underwent C3/4 discectomy and fusion: group 1: autologous tricortical iliac crest bone graft (n=8), group 2: Harms cage filled with autologous cancellous iliac crest bone grafts (n=8), and group 3: SynCage-C filled with autologous cancellous iliac crest bone grafts (n=8). Radiographic scans were performed pre- and postoperatively and after 1, 2, 4, 8, and 12 weeks, respectively. At the same time points, disc space height (DSH), height index (HI), intervertebral angle (IVA), and endplate angle (EA) were measured. After 12 weeks the animals were killed and fusion sites were evaluated using biomechanical testing in flexion, extension, axial rotation, and lateral bending. Additionally, histomorphological and histomorphometrical analyses were performed. RESULTS: Over a 12-week period the cage groups showed significantly higher

values for DSH, HI, IVA, and EA compared to the bone graft. In vivo stiffness was significantly higher for the tricortical iliac crest bone graft and Harms cage than in vitro stiffness. However, there was no difference between in vitro and in vivo stiffness of the SynCage-C. Histomorphometrical evaluation showed a more progressed bone **matrix** formation in the Harms cage group than in both other groups. CONCLUSION: The parameter endplate-implant contact area was not able to determine subsidence of cages. In contrast, the maximum contiguous pore of a cage significantly correlates with interbody bone **matrix** formation inside the cage. Additionally, there was no correlation between in vitro and in vivo stiffness of interbody fusion cages. Therefore, biomechanical in vitro studies are not able to determine in vivo outcome of fusion cages. Animal experimental evaluations of interbody fusion cages are essential prior to clinical use.

L22 ANSWER 7 OF 23 MEDLINE on STN

2002375687. PubMed ID: 12120650. Bone morphogenetic protein-2 application by a poly(D,L-lactide)-coated interbody cage: in vivo results of a new carrier for growth factors. Kandziora Frank; Bail Hermann; Schmidmaier Gerhard; Schollmeier Georg; **Scholz Matti**; Knispel Christian; Hiller Timo; Pflugmacher Robert; Mittlmeier Thomas; Raschke Michael; Haas Norbert P. (Unfall- und Wiederherstellungschirurgie, Universitatsklinikum Charite der Humboldt Universitat Berlin, Germany.. frank.kandziora@charite.de) . Journal of neurosurgery, **(2002 Jul)** Vol. 97, No. 1 Suppl, pp. 40-8. Journal code: 0253357. ISSN: 0022-3085. Pub. country: United States. Language: English.

AB OBJECT: Growth factors such as bone morphogenetic protein-2 (BMP-2) have been proven to promote spine fusion and to overcome the disadvantages of an autologous bone graft. The optimum method to deliver such growth factors remains a matter of discussion. The purpose of this study was to determine the safety and efficacy of a new poly(D,L-lactide) (PDLLA) carrier system for BMP-2 and to compare this carrier system with a collagen sponge carrier in a sheep cervical spine interbody fusion model. METHODS: Thirty-two sheep underwent C3-4 discectomy and fusion: Group 1, titanium cage (eight animals); Group 2, titanium cage coated with a PDLLA carrier (eight animals); Group 3, titanium cage coated with a PDLLA carrier including BMP-2 (150 microg) (eight animals); and Group 4, titanium cage combined with a collagen sponge carrier including BMP-2 (150 microg) (eight animals). Blood samples, body weight, and temperature were assessed. Radiographs were obtained pre- and postoperatively and after 1, 2, 4, 8, and 12 weeks. At the same time points, disc space height, intervertebral angle, and lordosis angle were measured. After the sheep were killed 12 weeks postoperatively, flexion-extension radiography was performed to evaluate fusion sites. Quantitative computerized tomography scans were obtained to assess bone mineral density (BMD), bone mineral content (BMC), and bone callus volume (BCV). Biomechanical testing was performed in flexion, extension, axial rotation, and lateral bending. Stiffness, range of motion, neutral, and elastic zone were determined. Histomorphological and -morphometrical analyses were performed, and polychrome sequential labeling was used to determine the timeframe of new bone formation. There were no differences among the groups concerning blood counts, body weight, and temperature. Compared with the noncoated cages, all PDLLA-coated cages showed significantly higher values for BMD of the callus, as well as slightly higher values for BMC, BCV, and the bone volume/total volume ratio. In comparison with the cage-alone group, the BMP-2 groups showed significantly higher values for BMD and biomechanical stiffness. Histomorphological, -morphometrical, and polychrome sequential labeling analyses demonstrated greater progression of callus formation in the BMP-2 groups than in any other group. Compared with BMP-2 delivered using a collagen sponge carrier, BMP-2 application with a PDLLA carrier resulted in a higher BCV and a greater progression of interbody callus formation in the histomorphometrical analysis. CONCLUSIONS: The use of cervical spine interbody fusion cages coated with PDLLA as a delivery system for growth factors was effective. In this 12-week follow-up study, the PDLLA coating showed no adverse effects. The

slight but not significant positive effect of the PDLLA carrier on interbody fusion might be a result of the degradation process of the biodegradable carrier. Compared with collagen sponge delivery of BMP-2, the PDLLA-coated interbody cages significantly increased the results of interbody bone **matrix** formation. In this new combination (implant + PDLLA + growth factor) the cage represents a "real fusion" cage, because it not only serves as a mechanical device for spinal fixation but also as a local drug delivery system.

L22 ANSWER 8 OF 23 MEDLINE on STN

2002250777. PubMed ID: 11990842. Influence of cage design on interbody fusion in a sheep cervical spine model. Kandziora Frank; Schollmeier Georg; **Scholz Matti**; Schaefer Jan; Scholz Alexandra; Schmidmaier Gerhard; Schroder Ralf; Bail Herman; Duda Georg; Mittlmeier Thomas; Haas Norbert P. (Unfall- and Wiederherstellungschirurgie, Universitatsklinikum Charite der Humboldt-Universitat Berlin, Germany.. frank.kandziora@charite.de) . Journal of neurosurgery, **(2002 Apr)** Vol. 96, No. 3 Suppl, pp. 321-32. Journal code: 0253357. ISSN: 0022-3085. Pub. country: United States. Language: English.

AB OBJECT: The purpose of this study was to compare the characteristics of interbody fusion achieved using an autologous tricortical iliac crest bone graft with those of a cylinder- and a box-design cage in a sheep cervical spine model. This study was designed to determine whether there are differences between three interbody fusion procedures in: 1) ability to preserve postoperative distraction; 2) biomechanical stability; and 3) histological characteristics of intervertebral bone **matrix** formation. . METHODS: Twenty-four sheep underwent C3-4 discectomy and fusion in which the following were used: Group 1, autologous tricortical iliac crest bone graft (eight sheep); Group 2, titanium cylinder-design cage filled with autologous iliac crest bone graft (eight sheep); and Group 3, titanium box-design cage filled with autologous iliac crest graft (eight sheep). Radiography was performed pre- and postoperatively and after 1, 2, 4, 8, and 12 weeks. At the same time points, disc space height, intervertebral angle, and lordosis angle were measured. After 12 weeks, the sheep were killed, and fusion sites were evaluated by obtaining functional radiographs in flexion and extension. Quantitative computerized tomography scans were acquired to assess bone mineral density, bone mineral content, and bone callus volume. Biomechanical testing was performed in flexion, extension, axial rotation, and lateral bending. Stiffness, range of motion, neutral zone, and elastic zone were determined. Histomorphological and histomorphometric analyses were performed, and polychrome sequential labeling was used to determine the time frame of new bone formation. Over a 12-week period significantly higher values for disc space height and intervertebral angle were shown in cage-treated sheep than in those that received bone graft. Functional radiographic assessment revealed significantly lower residual flexion-extension movement in sheep with the cylinder cage-fixed spines than in those that received bone graft group. The cylinder-design cages showed significantly higher values for bone mineral content, bone callus content, and stiffness in axial rotation and lateral bending than the other cages or grafts. Histomorphometric evaluation and polychrome sequential labeling showed a more progressed bone **matrix** formation in the cylindrical cage group than in both other groups. CONCLUSIONS: Compared with the tricortical bone graft, both cages showed significantly better distractive properties. The cylindrical cage demonstrated a significantly higher biomechanical stiffness and an accelerated interbody fusion compared with the box-design cage and the tricortical bone graft. The differences in bone **matrix** formation within both cages were the result of the significantly lower stress shielding on the bone graft by the cylinder-design cage.

L22 ANSWER 9 OF 23 MEDLINE on STN

2001336439. PubMed ID: 11403711. Changes of fibrosis-related parameters after high- and low-LET irradiation of fibroblasts. Fournier C; **Scholz M**; Weyrather W K; Rodemann H P; Kraft G. (GSI/Biophysics,

Planckstrasse 1, D-64291 Darmstadt, Germany.. c.fournier@gsi.de) . International journal of radiation biology, **(2001 Jun)** Vol. 77, No. 6, pp. 713-22. Journal code: 8809243. ISSN: 0955-3002. Pub. country: England: United Kingdom. Language: English.

AB PURPOSE: To investigate the radiation-induced, premature terminal differentiation and collagen production of fibroblasts after heavy ion irradiation. These endpoints are discussed as an underlying cellular mechanism of fibrosis. MATERIALS AND METHODS: Normal human foreskin fibroblasts (AG1522B) were used to determine clonogenic survival, the premature differentiation and synthesis of extracellular **matrix** (ECM) proteins, e.g. collagen after irradiation with X-rays, 195 and 11.0 MeV u(-1) carbon ions and 9.9 MeV u(-1) nickel ions. Additionally, biopsies from the skin of minipigs were taken. Similar experiments were carried out after irradiation with X-rays and 195 MeV u(-1) carbon ions. Results and conclusions: RBE for clonogenic survival as well as for fibrosis-related parameters for high-energy carbon ions are slightly above unity. Low-energy carbon ions with a higher LET are more efficient than X-rays, whereas the RBE of nickel ions is below unity. The results obtained for the differentiation pattern and protein production of porcine fibroblasts after irradiation with X-rays and high-energy carbon ions are in agreement with those obtained with human fibroblasts. An accumulation of fibrocytes with a concomitant increase in ECM protein production could be seen after in vitro irradiation. There is no indication of a higher RBE for fibrosis-related parameters compared with other endpoints (survival, chromosomal and DNA damage). The dose- and LET-dependence suggest that premature differentiation is a survival strategy after radiation damage.

L22 ANSWER 10 OF 23 MEDLINE on STN

2001324379. PubMed ID: 11267742. Application of a fiber-optic NIR-EFA sensor system for in situ monitoring of aromatic hydrocarbons in contaminated groundwater. Buerck J; Roth S; Kraemer K; **Scholz M**; Klaas N. (Forschungszentrum Karlsruhe, Institut fur Instrumentelle Analytik, P.O. Box 3640, D-76021 Karlsruhe, Germany.. jochen.buerck@ifia.fzk.de) . Journal of hazardous materials, **(2001 May 7)** Vol. 83, No. 1-2, pp. 11-28. Journal code: 9422688. ISSN: 0304-3894. Pub. country: Netherlands. Language: English.

AB Interaction of analyte molecules with the evanescent wave of light guided in optical fibers is among the most promising novel sensing schemes that can be applied for environmental monitoring and on-line process analysis. By combining this measuring principle with the solid-phase extraction of analyte molecules into the polymer cladding of a fiber, it is possible to perform direct absorption measurements in the cladding, if the fiber is adapted to a conventional spectrometer/photometer. A big advantage of this arrangement is that the measurement is scarcely disturbed by **matrix** effects (background absorption of water in IR measurements, stray light due to turbidity in the sample). By using near-infrared (NIR) evanescent field absorption (EFA) measurements in quartz glass fibers coated with a hydrophobic silicone membrane it is possible to design and construct sensors for monitoring apolar hydrocarbons (HCs) in aqueous **matrices.**The paper presents a fiber-optic sensor system for the determination of aromatic HCs in groundwater or industrial wastewater. Generally, this instrument is suitable for quantitative in situ monitoring of pollutants such as aromatic solvents, fuels, mineral oils or chlorinated HCs with relatively low water saturation solubility (typically between 0.01 and 10 g l(-1)). The sensor probe is connected via all-silica fibers to a filter photometer developed at the IFIA, thus, allowing even remote analysis in a monitoring well. This portable instrument provides a total concentration signal of the organic compounds extracted into the fiber cladding by measuring the integral absorption at the 1st C--H overtone bands in the NIR spectral range.In situ measurements with the sensor system were performed in a groundwater circulation well at the VEGAS research facility of the University of Stuttgart (Germany). The NIR-EFA sensor system was tested within the frame of an experiment that was carried through in a tank containing sandy gravel with a

groundwater-saturated aquifer, where soil and groundwater were contaminated with technical grade xylene. The goal of this experiment was to model and optimize the groundwater circulation well used for the remediation of the aquifer and soil surrounding the well. The sensor proved to trace reliably the total hydrocarbon concentration in the process water pumped from the well to a stripper column. Measurements were performed continuously over 4 months with C8 HC sum concentrations in the process water between 80 mg l(-1) down to the limit of detection, which is around 200 microg l(-1). It could be demonstrated that the fiber-optic sensor system is a valuable tool for near-real-time control of a remedial action technique and verification and documentation of its success.

L22 ANSWER 11 OF 23 MEDLINE on STN

2001023046. PubMed ID: 10885561. Cytomegalovirus-infected neuroblastoma cells exhibit augmented invasiveness mediated by beta1alpha5 integrin (VLA-5). **Scholz M**; Blaheta R A; Wittig B; Cinatl J; Vogel J U; Doerr H W; Cinatl J Jr. (Interdisciplinary Laboratory of the Institute for Medical Virology, Johann Wolfgang Goethe University, Frankfurt am Main, Germany.. m.scholz@em.uni-frankfurt.de) . Tissue antigens, **(2000 May)** Vol. 55, No. 5, pp. 412-21. Journal code: 0331072. ISSN: 0001-2815. Pub. country: Denmark. Language: English.

AB Previously, experimental in vivo results showed that the productively and persistently human cytomegalovirus (HCMV)-infected neuroblastoma cell line UKF-NB-4AD169 exhibits a more malignant phenotype than the non-infected variant UKF-NB-4. To prove the assumption that enhanced malignancy may be due to enhanced invasive potential of the infected cells we studied interactions of both lines with monolayers of cultured endothelial cells. UKF-NB-4AD169 cells adhered to and transmigrated through endothelial monolayer to a significantly higher extent compared with UKF-NB4. Furthermore, the adhesion of UKF-NB-4AD169 but not of UKF-NB4 resulted in focal disruption of the monolayer integrity which facilitates tumor cell transmigration. Blocking antibodies directed against the beta1 integrin chain as well as beta1alpha5 on the tumor cells specifically inhibited adhesion in a concentration-dependent manner. When UKF-NB-4 were pretreated with a beta1 integrin activating antibody, focal disruption of the endothelial integrity also occurred. These findings lead us to suggest that HCMV infection activates beta1alpha5 in the host neuroblastoma cell which in turn enables these cells to tightly adhere to endothelial cells. In the presence of the protease inhibitor phenantroline, beta1alpha5-mediated adhesion was not impaired whereas UKF-NB4AD169-mediated endothelial monolayer permeabilization was dose dependently inhibited. We conclude that human cytomegalovirus infection contributes to augmented neuroblastoma invasiveness via adhesion of activated beta1alpha5 and subsequent **matrix** digestion by proteases.

L22 ANSWER 12 OF 23 MEDLINE on STN

1998278402. PubMed ID: 9617840. Development of an ultrasensitive in vitro assay to monitor growth of primary cell cultures with reduced mitotic activity. Blaheta R A; Kronenberger B; Woitaschek D; Weber S; **Scholz M**; Schuldes H; Encke A; Markus B H. (Department of General Surgery, Johann Wolfgang Goethe-University, Frankfurt am Main, Germany.. blaheta@em.uni-frankfurt.de) . Journal of immunological methods, **(1998 Feb 1)** Vol. 211, No. 1-2, pp. 159-69. Journal code: 1305440. ISSN: 0022-1759. Pub. country: Netherlands. Language: English.

AB Primary cell cultures, such as isolated epithelial cells, neuronal cells, or hepatocytes are characterized by a very low mitotic activity. Monitoring of small changes in cell numbers requires staining with a DNA-specific dye with an extremely high sensitivity and a low inter- and intraassay variability. For this purpose, an ultrasensitive in vitro assay has been developed based on the fluorescent nucleic acid stain PicoGreen. PicoGreen has been shown to detect as little as 0.5 ng pure DNA or 10(2) cells (interassay SD < 10%, intraassay SD < 5%). This is far above the limit of sensitivity of conventional fluorochromes, such as

Hoechst 33342 or propidium iodide. To obtain optimum efficacy of PicoGreen, cells were digested with papain for 20 h at 60 degrees C prior to staining. Under these conditions, the slope factor was calculated to be 0.105 relative fluorescence units (RFU)/cell, which is far superior to the slope factor of Hoechst 33342 (0.0137 RFU/cell) or propidium iodide (0.0077 RFU/cell). Analysis of the blank values revealed a very low autofluorescence of PicoGreen, which is only 1/50th of the autofluorescence of Hoechst 33342 and 1/5th of the autofluorescence of propidium iodide. Additional coating of the culture plates with extracellular **matrix** proteins to prevent cellular dedifferentiation did not influence the high sensitivity of PicoGreen. In conclusion, the PicoGreen-assay seems to be the method of choice when the growth capacity of primary cell cultures needs to be analyzed with high accuracy.

L22 ANSWER 13 OF 23 MEDLINE on STN

1998226490. PubMed ID: 9566838. Dedifferentiation of human hepatocytes by extracellular **matrix** proteins in vitro: quantitative and qualitative investigation of cytokeratin 7, 8, 18, 19 and vimentin filaments. Blaheta R A; Kronenberger B; Woitaschek D; Auth M K; **Scholz M**; Weber S; Schuldes H; Encke A; Markus B H. (Department of General Surgery, Hospital of the Johann Wolfgang Goethe-University, Frankfurt am Main, Germany.. Blaheta@em.uni-frankfurt.de) . Journal of hepatology, **(1998 Apr)** Vol. 28, No. 4, pp. 677-90. Journal code: 8503886. ISSN: 0168-8278. Pub. country: Denmark. Language: English.

AB BACKGROUND/AIMS: Liver cirrhosis and carcinogenesis are accompanied by an alteration in extracellular **matrix** material. Histological studies reveal upregulation of the intermediate filaments cytokeratins 8 and 18 and de novo synthesis of vimentin, and cytokeratin 7 or 19 in hepatocytes. The aim of this study was to investigate how these two processes are linked. METHODS: Human hepatocytes were seeded: (i) on the **matrix** components collagen I, IV, laminin, or fibronectin; (ii) on stoichiometrically different complete **matrices**, derived from human placenta (**matrix** I) or the Englebreth-Holm-Swarm tumor (**matrix** II), and (iii) inside a three-dimensional collagen I sandwich. Filament expression and assembly were measured by cytofluor analysis or confocal laserscan microscopy. RESULTS: The **matrix** components or complete **matrices** triggered enhancement of cytokeratins 8 and 18 and de novo synthesis of cytokeratins 7, 19 and vimentin in a characteristic way. Confocal images demonstrated a dense and uniform network of cytokeratin 18 in freshly isolated cells, which was "replaced" by a few, thick protein bundles within 20 days. Interestingly, newly synthesized cytokeratin 19 structurally resembled the cytokeratin 19 organization in biliary epithelial cells. Marked cytokeratin alterations could be partially prevented when hepatocytes were grown in a three-dimensional collagen sandwich. CONCLUSIONS: Pathological alterations to the chemical composition, molecular structure, or spatial arrangement of the liver **matrix** lead to specific changes in the intermediate filament pattern in human hepatocytes. We assume that degradation of the **matrix** results in pathological alterations to the hepatocyte-receptor **matrix**-ligand ratio, followed by a switch from physiological to pathological cell-activation.

L22 ANSWER 14 OF 23 MEDLINE on STN

91287444. PubMed ID: 2062151. In search of missing links in otology. I. Development of a collagen-based biomaterial. Goycoolea M V; Muchow D C; **Scholz M T**; Sirvio L M; Stypulkowski P H. (Minnesota Ear Head and Neck Clinic, Department of Otolaryngology, University of Minnesota, Minneapolis.) The Laryngoscope, **(1991 Jul)** Vol. 101, No. 7 Pt 1, pp. 717-26. Journal code: 8607378. ISSN: 0023-852X. Pub. country: United States. Language: English.

AB Experiments leading to the development and use of a biomaterial based on reconstituted collagen for use in tympanoplasty are presented. A stable, even membrane with optimal strength and an organized **matrix** of collagen protein strands has been obtained. Biocompatibility was

documented by subcutaneous implantation, cytotoxicity with agar overlay, cell contact, and cell-growth inhibition studies. Experimental grafting in chinchillas with perforated tympanic membranes demonstrated that the collagen membrane performed well in all cases. Histopathological studies in chinchillas showed that the collagen membrane compared favorably with fascia grafts. Of significance is that: 1. The membrane has a **matrix** of microperforations that enhance tissue ingrowth, allow stable anchoring, and permit aeration of the middle ear cavity. 2. The membranes obtained are not exposed to aldehyde cross-linking; therefore, tissue reaction due to aldehydes is avoided.

L22 ANSWER 15 OF 23 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

2000:282492 Document No.: PREV200000282492. Maintaining cells for an extended time by entrapment in a contracted **matrix.** Hu, Wei-Shou [Inventor, Reprint author]; Cerra, Frank Bernard [Inventor]; Nyberg, Scott Lyle [Inventor]; **Scholz, Matthew Thomas** [Inventor]; Shatford, Russell A. [Inventor]. Minneapolis, MN, USA. ASSIGNEE: Regents of the University of Minnesota, Minneapolis, MN, USA. Patent Info.: US 5981211 **19991109.** Official Gazette of the United States Patent and Trademark Office Patents, (Nov. 9, 1999) Vol. 1228, No. 2. e-file.
CODEN: OGUPE7. ISSN: 0098-1133. Language: English.

AB Methods of maintaining animal cells for product production, for supporting hepatocyte function and viability to treat a patient suffering from hepatic failure and for preserving tissue-specific function of mammalian cells are carried out with a bioreactor containing a feed and waste chamber and a cell chamber separated by a selectively permeable membrane. Within the cell chamber, a biocompatible contracted three-dimensional gel **matrix** entraps animal cells or genetic modifications thereof, and a liquid phase contains a concentrated solution of the cell product. The bioreactor uses only two chambers to achieve three distinct zones within the bioreactor. The bioreactor can be of either hollow fiber or flat-bed configuration. In the configuration using hollow fibers, the two fluid paths correspond to the cavity surrounding the hollow fibers (the extracapillary space), and to the lumens of the hollow fibers themselves. Both fluid paths have inlet and outlet ports. Communication between the two fluid paths is across the permeable medium--the hollow fiber material. To prepare a bioartificial liver, hepatocytes are inoculated into the hollow fibers in a solution which quickly forms a highly porous gel. The gel subsequently contracts, leaving an open channel within the hollow fiber adjacent to the gel core entrapped hepatocytes. This channel can be perfused with nutrient media for hepatocytes. The channel can also serve as a waste stream to remove toxins that the hepatocytes have modified to a water soluble form.

L22 ANSWER 16 OF 23 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1998:145837 Document No.: PREV199800145837. Influence of extracellular **matrix** proteins on cytokeratin 7, 8, 18, 19 and vimentin filaments in human hepatocytes. Blaheta, Roman A.; Kronenberger, Bernd; Woitaschek, Dirk; **Scholz, Martin**; Weber, Stephan; Encke, Albrecht; Markus, Bernd H.. Dep. General Surg., Hosp. Johann Wolfgang Goethe-Univ., D-60590 Frankfurt am Main, Germany. European Journal of Cell Biology, (**1997**) Vol. 74, No. SUPPL. 47, pp. 13. print.
Meeting Info.: 42nd International Congress of the European Tissue Culture Society (ETCS). Mainz, Germany. October 12-15, 1997. European Tissue Culture Society.
CODEN: EJCBDN. ISSN: 0171-9335. Language: English.

L22 ANSWER 17 OF 23 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1995:384455 Document No.: PREV199598398755. Change of cytokeratin pattern in human hepatocytes cultured on different extracellular **matrices**: Possible relevance for cell transplantation. Kronenberger, B.; Blaheta, R. A.; **Scholz, M.**; Encke, A.; Markus, B. H.. J.W. Goethe Univ.,

Dep. Gen. Surgery, Frankfurt, Germany. 9TH INTERNATIONAL CONGRESS OF IMMUNOLOGY. (**1995**) pp. 650. The 9th International Congress of Immunology. Publisher: 9th International Congress of Immunology, San Francisco, California, USA.
Meeting Info.: Meeting Sponsored by the American Association of Immunologists and the International Union of Immunological Societies. San Francisco, California, USA. July 23-29, 1995.
Language: English.

L22 ANSWER 18 OF 23 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1999:637231 The Genuine Article (R) Number: 227NT. Cytomegalovirus infection as a possible progression factor in neuroblastoma disease. **Scholz M**; Blaheta R A; Hundemer M; Doerr H W; Cinatl J (Reprint). Univ Frankfurt, Inst Med Virol, Sandhofstr 2-4, D-60528 Frankfurt, Germany (Reprint); Univ Frankfurt, Inst Med Virol, D-60528 Frankfurt, Germany; Univ Frankfurt, Klin Kinderheilkunde, Interdisziplinares Lab, D-60590 Frankfurt, Germany; Univ Frankfurt, Klin Allgemein & Gefasschirurg, D-60590 Frankfurt, Germany. KLINISCHE PADIATRIE (**JUL-AUG 1999**) Vol. 211, No. 4, pp. 310-313. ISSN: 0300-8630. Publisher: GEORG THIEME VERLAG KG, RUDIGERSTR 14, D-70469 STUTTGART, GERMANY. Language: German.
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Background: There is evidence that the infection with human cytomegalovirus is clinically associated with enhanced metastasis and progression of neuroblastoma disease, An in vitro model with HCMV-infected neuroblastoma cells (NB) was used to investigate whether HCMV modulates the metastatic potential of NB.

Methods: The neuroblastoma cell line UKF-NB-4 and its productively and persistently HCMV-infected variant UKF-NB-4(AD169) were cocultured with human endothelial cells (EC). The rate of NB adherent to the endothelial monolayer and the rate of transmigrating NB was determined by means of combined reflexion interference contrast/phase contrast microscopy.

Results: UKF-NB-4(AD169) adhered to and transmigrated through cocultured EC monolayer to a significantly higher extent compared with the non-infected cell line UKF-NB-4, At the cell-to-cell contact sites between UKF-NB-4(AD169) and EC the intercellular endothelial contacts loosened resulting in the formation of reversible focal openings in the monolayer. This phenomenon was not observed with UKF-NB-4. The transendothelial migration rate of UKF-NB-4(AD169) was therefore significantly higher than that of UKF-NB-4, The formation of focal openings in the endothelial monolayer and the enhanced transmigration rate of UKF-NB-4(AD169) was suppressed in the presence of phenantroline, suggesting that HCMV-induced proteinases might be responsible for this phenomenon.

Conclusion: The results confirm our assumption that HCMV has the ability to modulate functional properties of NB which are essential for the interactions with endothelial cells and thus for metastasation. The clinical relevance of these findings has to be further defined yet by means of prospective studies with HCMV-infected neuroblastoma patients, Proteinase inhibitors could be valuable in the therapeutic treatment of these patients.

L22 ANSWER 19 OF 23 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN

1997:862736 The Genuine Article (R) Number: YG407. Influence of extracellular **matrix** proteins on cytokeratin 7, 8, 18, 19 and vimentin filaments in human hepatocytes.. Blaheta R A (Reprint); Kronenberger B; Woitaschek D; **Scholz M**; Weber S; Encke A; Markus B H. UNIV FRANKFURT KLINIKUM, DEPT GEN SURG, D-60590 FRANKFURT, GERMANY. EUROPEAN JOURNAL OF CELL BIOLOGY (**1997**) Vol. 74, Supp. [47], pp. 19-19. ISSN: 0171-9335. Publisher: WISSENSCHAFTLICHE VERLAG MBH, BIRKENWALDSTRASSE 44, POSTFACH 10 10 61, 70009 STUTTGART, GERMANY. Language: English.

L22 ANSWER 20 OF 23 CAPLUS COPYRIGHT 2008 ACS on STN

2003:356741 Document No. 138:376518 Methods for producing thin film on ASIC

(TFA) image sensors and the TFA image sensors. **Scholz, Markus**; Rieve, Peter; Wagner, Michael; Lule, Tarek; Seibel, Konstantin; Prima, Jens; Benthien, Stephan; Sommer, Michael (Silicon Vision A.-G., Germany). PCT Int. Appl. WO 2003038901 A1 **20030508**, 28 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (German). CODEN: PIXXD2. APPLICATION: WO 2002-DE3964 20021021. PRIORITY: DE 2001-10152325 20011026.

AB Methods for producing a TFA image sensor in which a multi-layer arrangement comprising a photodiode **matrix** is arranged on an ASIC switching circuit provided with electronic circuits for operating the TFA image sensor, such as pixel electronics, peripheral electronics and system electronics, for the pixel-wise conversion of electromagnetic radiation into an intensity-dependent photocurrent, the pixels being connected to contacts of the underlying pixel electronics of the ASIC switching circuit are described in which the CMOS passivation layer in the photoactive region and then the upper CMOS metallisation are removed and replaced by a metallic layer which is structured in the pixel raster, for the formation of back electrodes, after which the photodiode **matrix** is applied and structured as a pixel **matrix.** The methods enable conventionally produced ASIC switching circuits to be used without impairing the topog. of the photoactive sensor surface. A passivating protective layer and/or a color filter layer having a passivating action can be applied on the photodiode **matrix.** TFA image sensors havoing the structures produced by the methods are also described.

L22 ANSWER 21 OF 23 CAPLUS COPYRIGHT 2008 ACS on STN

1990:196668 Document No. 112:196668 Bioreactor. Hu, Wei Shou; **Scholz, Matthew T.** (University of Minnesota, USA). PCT Int. Appl. WO 8911529 A1 **19891130**, 70 pp. DESIGNATED STATES: W: JP, KR; RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1989-US2228 19890519. PRIORITY: US 1988-197700 19880523.

AB A bioreactor apparatus is described for maintaining animal cells for continuous production of various cell products. It consists of two chambers, a feed and waste chamber and cell chamber separated by a selectively permeable ultrafiltration membrane. Within the cell chamber, a biocompatible three dimensional **matrix** entraps the animal cells. Due to the presence of this biocompatible **matrix**, the cell chamber generally has a gel phase, i.e., the biocompatible **matrix** and cells, and a liquid phase containing a concentrated solution of the cell product to be harvested. Thus, the bioreactor of this invention uses only two chambers to achieve three distinct zones within the apparatus The bioreactor was successfully used for cultivation of 293 cells (human kidney epithelial cells), human fibroblasts, Chinese hamster ovary cells, and AFP-27 hybridoma cells.

L22 ANSWER 22 OF 23 CAPLUS COPYRIGHT 2008 ACS on STN

1970:534085 Document No. 73:134085 Original Reference No. 73:21839a,21842a MO [molecular orbital] calculations on heterocycles. 4. Influence of charge termsin the Hamilton diagonal-**matrix** of self-consistent methods on the calculation of π-electron densities and bond lengths. Heidrich, Dietmar; **Scholz, Manfred** (Sekt. Chem., Karl Marx-Univ., Leipzig, Fed. Rep. Ger.). Monatsh. Chem., 101(5), 1394-1402 (German) **1970.** CODEN: MOCHAP.

AB The simple SCβ and SCα,β MO methods (SC = self-consistent) of D. Heidrich and M. Scholz (1969) give π-electron ds. and bond lengths for N-heterocycles (pyrrole and pyridine series) that agree well with those determined with extended π-electron SCF Pariser-Parr-Pople-type

calcns.

L22 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2008 ACS on STN
1969:99720 Document No. 70:99720 Original Reference No. 70:18659a,18662a Self-consistent method based on Hueckel's M.O. model. II. Heidrich, Dietmar; **Scholz, Manfred** (Karl-Marx-Univ. Leipzig, Leipzig, Fed. Rep. Ger.). Zeitschrift fuer Chemie, 9(3), 87-98 (German) **1969.** CODEN: ZECEAL. ISSN: 0044-2402.
AB Self-consistent methods based on the Hueckel M.O. model are reviewed with 73 references. The theoretical basis and usefulness of SCβ methods are discussed and the methods are compared with the Pople Frs **matrix** elements. Also, theoretical considerations of SCα,β methods are discussed and SCα,β calcns. are compared with the results obtained with other SC methods.

=> s carrier
L23 927704 CARRIER

=> s l23 and soluble matrix
L24 28 L23 AND SOLUBLE MATRIX

=> s l24 and antigen
L25 2 L24 AND ANTIGEN

=> dup remove l25
PROCESSING COMPLETED FOR L25
L26 2 DUP REMOVE L25 (0 DUPLICATES REMOVED)

=> d l26 1-2 cbib abs

L26 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN
2005:975659 Document No. 143:254039 Formulation of leukocyte-stimulation matrixes for vaccination and the determination of T-cell subtypes. Scholz, Martin (Leukocare GmbH, Germany). Eur. Pat. Appl. EP 1571204 A1 20050907, 15 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK. (German). CODEN: EPXXDW. APPLICATION: EP 2004-5177 20040304.
AB The invention concerns leukocyte-stimulation matrix and/or the induction of immunotolerance by using (a) one or more **carriers**; (b) a **soluble matrix** for embedding one or more components for leukocyte-stimulation and/or induction of immunotolerance; (c) one or more components for leukocyte-stimulation and/or induction of immunotolerance that are embedded in the **soluble matrix.** Further ingredients are coupling agents for binding the **carrier** with the components for leukocyte-stimulation and/or induction of immunotolerance. Typical stimulating agents are **antigens**, MHC **antigens**, cell debris, viruses, etc. Polyurethane, polystyrene, and medical metals, glasses, natural products are the **carriers.** As coupling agents bromocyan, agarose, silane, etc. are used; matrixes are starch, cellulose, glycogen, polyethylene glycol.

L26 ANSWER 2 OF 2 MEDLINE on STN
93271203. PubMed ID: 8499465. Two yeast peroxisomal proteins crossreact with an antiserum against human sterol **carrier** protein 2 (SCP-2). Tahotna D; Hapala I; Zinser E; Flekl W; Paltauf F; Daum G. (Institut fur Biochemie und Lebensmittelchemie, Technische Universitat Graz, Austria.) Biochimica et biophysica acta, (1993 May 14) Vol. 1148, No. 1, pp. 173-6. Journal code: 0217513. ISSN: 0006-3002. Pub. country: Netherlands. Language: English.
AB An antibody raised against human sterol **carrier** protein 2 (SCP-2) crossreacts with two yeast peroxisomal proteins. These proteins have apparent molecular weights of 35 and 58 kDa. Subfractionation of peroxisomes revealed that the 58 kDa species is a **soluble**

matrix protein, whereas the 35 kDa protein is membrane bound. Treatment of isolated peroxisomal membranes with 0.25 M KCl released the 35 kDa crossreactive protein into the soluble supernatant. However, lipid transfer activity could be attributed neither to the 35 kDa nor to the 58 kDa protein.

=>

---Logging off of STN---

=>
Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	249.30	249.51

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-14.40	-14.40

STN INTERNATIONAL LOGOFF AT 12:05:25 ON 03 JAN 2008